Indian Museum.

ANNUAL REPORT,

1897-98.

Indian Museum.

ANNUAL REPORT.

April 1897 to March 1898.

CALCUTTA:
PRINTED BY ORDER OF THE TRUSTEES.
1899.

MINUTES

OF

THE ANNUAL MEETING

OF

THE TRUSTEES OF THE INDIAN MUSEUM.

MONDAY, 9TH MAY 1898.

Present:

THE HON'BLE MR. H. H. RISLEY, I.C.S., C.I.E., *in the Chair.*
R. D. OLDHAM, ESQ.
R. E. S. THOMAS, ESQ.
SURGEON-MAJOR D. PRAIN, I.M.S.
D. J. MACPHERSON, ESQ., I.C.S., C.I.E.
DR. MAHENDRA LAL SIRCAR, C.I.E.
G. W. KÜCHLER, ESQ., *Honorary Secretary.*

IA. The following Officers were elected for the ensuing year :—

THE HON'BLE MR. H. H. RISLEY, I.C.S., C.I.E., *Chairman.*
MAJOR-GENERAL C. STRAHAN, R.E., *Vice-Chairman.*
RAI OMRITO NATH MITTER, BAHADUR, *Honorary Treasurer.*
G. W. KÜCHLER, ESQ., *Honorary Secretary.*

IIA. The Committees for the ensuing year were appointed as follows:—

Finance and Visiting Committees.	*Economic Committee.*
W. B. Colville, Esq.	W. B. Colville, Esq.
A. Pedler, Esq., F.R.S.	A. Pedler, Esq., F.R.S.
Dr. A. F. R. Hœrnle, C.I.E.	Dr. A. F. R. Hœrnle, C.I.E.
A. Simson, Esq.	A. Simson, Esq.
Dr. Mahendra Lal Sircar, C.I.E.	Surgeon-Major D. Prain, I.M.S.
Surgeon-Major D. Prain, I.M.S.	W. H. Dobbie, Esq.
W. H. Dobbie, Esq.	

H. H. RISLEY,

Chairman.

REPORT

OF

THE TRUSTEES OF THE INDIAN MUSEUM.

FOR THE YEAR 1897-98.

The following report on the administration of the Indian Museum Trust, during the year ending 31st March 1898, is submitted for the information of His Excellency the Right Hon'ble the Governor-General in Council.

MEMBERS.

At the commencement of the year the Board of Trustees consisted of the following Members :—

1. R. E. HAMILTON, ESQ., *Accountant-General of Bengal.*	
2. MAHARAJ KUMAR PRODYOT COOMAR TAGORE. 3. J. ELIOT, ESQ., F.R.S., C.I.E. 4. MAJOR-GENERAL C. STRAHAN, R.E. 5. R. E. S. THOMAS, ESQ. 6. BRIGADE-SURGEON LT.-COL. G. KING, F.R.S., C.I.E.	Nominated by the Governor-General in Council.
7. THE HON'BLE MR. M. FINUCANE, I.C.S., C.S.I. 8. W. C. MACPHERSON, ESQ., I.C.S. 9. A. SIMSON, ESQ. 10. MOULVI ABDUL JUBBAR, KHAN BAHADUR, C.I.E. 11. RAI OMRITO NATH MITTER, BAHADUR.	Nominated by the Lieutenant-Governor of Bengal.
12. R. D. OLDHAM, ESQ. 13. DR. A. F. R. HOERNLE. 14. C. LITTLE, ESQ. 15. DR. MAHENDRA LAL SIRCAR, C.I.E. 16. A. PEDLER, ESQ., F.R.S.	Nominated by the Asiatic Society of Bengal.

Changes in the Board during the year 1897-98.

On 1st May 1897, Mr. R. E. Hamilton, the Accountant-General of Bengal and *ex-officio* Trustee, Indian Museum, went on furlough, being succeeded in the Trusteeship by Mr. T. H. Biggs, his official *locum tenens*. Subsequently in March 1898, Mr. T. H. Biggs was transferred to Madras, from which date his successor, Mr. W. L. Harvey, I.C.S., acted as an *ex-officio* Trustee in his place. In March 1898, Sir G. King, F.R.S., K.C.I.E., retired from India, his seat on the Board remaining vacant during the remainder of the year under review. On 10th March 1898, Mr. D. J. Macpherson, I.C.S., C.I.E., became an *ex-officio* Trustee, having been appointed to officiate as Secretary to the Government of Bengal in the Revenue Department during the absence on deputation of the Hon'ble Mr. M. Finucane, I.C.S., C.S.I. On 10th November 1897, Mr. P. C. Lyon, I.C.S., became *ex-officio* a Trustee, having been appointed to succeed Mr. W. C. Macpherson, I.C.S., as Director of Land Records and Agriculture, Bengal. On 24th July 1897, the Hon'ble Sahibzada Muhammad Bukhtyar Shah, C.I.E., was appointed by the Bengal Government a Trustee, *vice* Moulvi Abdul Jubbar, Khan Bahadur, C.I.E., resigned. On 7th January 1898, Mr. G. W. Küchler was nominated by the Asiatic ociety of Bengal as a Member of the Board in the place of Mr. C. Little resigned. Colonel J. Waterhouse I.S.C., resigned his seat on the Board on the 18th May 1897 in consequence of his retirement from India, being succeeded by Mr. F. J. Rowe. Mr. F. J. Rowe was elected to the seat

thus rendered vacant from the 14th June 1897 by the Trustees.

The result of these changes was that, on the 31st March 1898, the Board was composed as follows :—

1. W. L. Harvey, Esq., I.C.S., *Accountant-General of Bengal.*

2. Maharaj Kumar Prodyot Coomar Tagore. 3. J. Eliot, Esq., F.R.S., C.I.E. 4. Major-General C. Strahan, R.E. 5. R. E. S. Thomas, Esq. 6. Vacant (Sir G. King, retired).	Nominated by the Governor-General in Council.
7. D. J. Macpherson, Esq., I.C.S., C.I.E. 8. P. C. Lyon, Esq., I.C.S. 9. A. Simson, Esq. 10. The Hon'ble Sahibzada Muhammad Bukhtyar Shah, C.I.E. 11. Rai Ombito Nath Mitter, Bahadur.	Nominated by the Lieutenant-Governor of Bengal.
12. R. D. Oldham, Esq. 13. Dr. A. F. R. Hœrnle, C.I.E. 14. G. W. Küchler, Esq. 15. Dr. Mahendra Lal Sircar, C.I.E. 16. A. Pedler, Esq., F.R.S.	Nominated by the Asiatic Society of Bengal.
17. F. J. Rowe, Esq. 18. W. B. Colville, Esq. 19. W. Banks Gwyther, Esq. 20. The Hon'ble Mr. H. H. Risley, I.C.S., C.I.E. 21. Edmund Upton, Esq.	Elected by the Trustees.

Meetings have been held monthly throughout the year, with the exception of the October meeting as it happened to fall during the Puja Holidays.

The Annual General Meeting was held on 10th May 1897, at which the following Officers of the Trust and Members of the Finance and Visiting and Economic and Art Committees were appointed for 1897-98 :—

HONORARY OFFICERS :

The Hon'ble Mr. H. H. Risley, I.C.S., C.I.E., *Chairman.*

Brigade-Surgeon Lt.-Col. G. King, F.R.S., C.I.E., *Vice-Chairman.*

Rai Omrito Nath Mitter, Bahadur, *Honorary Treasurer.*

C. Little, Esq., *Honorary Secretary.*

COMMITTEES :

Finance and Visiting Committees.

R. D. Oldham, Esq.
A. Pedler, Esq., F.R.S.
Dr. A. F. R. Hœrnle, C.I.E.
W. Banks Gwyther, Esq.
Dr. Mahendra Lal Sircar, C.I.E.
T. H. Biggs, Esq.

Economic Committee.

R. D. Oldham, Esq.
A. Pedler, Esq., F.R.S.
Dr. A. F. R. Hœrnle, C.I.E.
W. Banks Gwyther, Esq.
T. H. Biggs, Esq.

The Honorary Officers are also *ex-officio* Members of all Committees.

During the year eleven meetings of the Finance and Economic Committees were held, at which the accounts were examined and expenditure controlled.

In addition to the above a special meeting of the Economic Committee was held, at which the question of providing wooden sunshades on the outside of the windows of the Economic and Art Section for the protection of the collection and cases was discussed.

The Visiting Committee has held three meetings : (i) in connection with the inspection of the work done by Dr. Bloch in the Asoka Gallery and the reproduction of a missing portion of a stupa from the fragments of the Swat sculptures ; (ii) in connection with the utilization of the space vacated by the Geological Survey of India in the main building ; and (iii) in connection with the demolishing of the row of godowns occupied by the servants of the School of Art and the inspection of the Asoka Gallery on its completion.

A special meeting of the General Committee was also held in addition to its ordinary meetings at which the re-

signation submitted by Mr. H. W. Fleming of the Registrarship was accepted and Mr. H. B. Perie was appointed to succeed him.

GENERAL ADMINISTRATION.

The Zoological and Archæological Section of the Museum was under the superintendence of Surgeon-Captain A. R. S. Anderson up to the 5th October. Surgeon-Major A. W. Alcock who had been recalled from leave by the order of the Right Hon'ble the Secretary of State for India, resumed charge of this section from the 6th October and retained it to the end of the year under review. On being relieved by Surgeon-Major Alcock, Surgeon-Captain Anderson reverted to his substantive appointment as Surgeon-Naturalist to the Marine Survey of India, and left for Bombay to join his ship the "Investigator." The Trustees would here take the opportunity of again expressing their thanks to the Director of the Marine Survey of India for having lent the services of Surgeon-Captain Anderson, and also to Surgeon-Captain Anderson himself for his able management of the Museum during the period he was in charge.

2. Dr. Geo. Watt, C.I.E., was throughout the year in charge of the Economic and Art Section of the Museum, and the Trustees have much pleasure in again recording their recognition of the administrative ability displayed by this officer.

3. The Trustees are glad to be able to state that they have been fortunate enough to secure the services of Mr. D. Hooper, F.C.S., F.I.C., F.L.S., etc., late Quinologist to the Government of Madras, for the post of Curator of the Economic and Art Section, *vice* Mr. T. N. Mukherji retired. Mr. Hooper joined his appointment on the 23rd May. Mr. Hooper is a skilled analytical chemist and is the author of various papers on Indian drugs, medicines, and economic

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products of this country, which have been published in English, Continental and American periodicals. He was joint-editor with Dr. W. Dymock of Bombay and Dr. C. J. H. Warden of Calcutta, of the "Pharmacographia Indica," and he also edited the "Materia Medica" from 1892. Since his employment under the Trustees, he has done a number of useful analyses, and the question of fitting up a chemical laboratory for his use is under consideration.

4. In the last Annual Report mention was made of the fact that the work of removal into the new East Wing of the different offices and study collections had been begun. The Trustees have now the pleasure to report that that work has been finished with the exception of the removal of the Reptiles, a portion of the Fishes and the Archæological Collection.

5. By the removal of the offices of the Geological Survey of India from the main block to the new East Wing, six rooms have been placed at the disposal of the Trustees, which they propose to utilize in the following manner, an arrangement to which the Government of India have accorded their consent:—

(a) the long room in which the library of the Geological Survey of India was located to be converted into a Fish Gallery, owing to the room now being used for that purpose being hardly large enough. A sky-light is to be provided to this room to admit more light;

(b) the room in the ground floor lately known as the Geological Survey Laboratory, to be arranged as a Gallery for the reception of economic exhibits;

(c) the room lately used by the Geological Survey draftsmen, to be devoted to the purposes of experiments, etc., in Economic Entomology;

(d) the room formerly occupied by the Director of the Geological Survey, as his office, to be made into

a Gallery for the exhibition of Coins, after the windows and doors have been slightly strengthened;

(e) the room lately called the Geological Survey map room, to be used as a Gallery for the exhibition of Entomological specimens, and

(f) the Geological Survey printing press room, to be occupied by the Entomological Assistant as his office. This room is also to be fitted up with a skylight.

By the above arrangement the present Fish Gallery as well as the South-west corner room on the first floor, lately occupied by the Entomological Assistant, will become vacant. Into the former it is proposed to remove the aberrant Mammalian orders of Monotremes, Marsupials, Edentates, Sirenia and Cetacea, leaving the present Mammal Gallery entirely to the more numerous and familiar orders of Eutheria. In the latter it is proposed to place part of the Bird Collection, so as to leave space at the Eastern end of the Bird Gallery for the extension of the Reptile collection, for which additional space is greatly needed. No work was commenced on the fittings of these galleries during the year, as no final reply has as yet been received from the Government of India, with regard to the question of a special grant for fitting up a portion of the space referred to.

6. The earthquake of the 12th of June happily did very little harm to the Museum, the details of the damage done being as follows :—

(a) in the Zoological and Archæological Section several of the old cracks in different parts of the main building opened and allowed the material with which they had been mended to fall out, with the result that two cases were broken thereby.

The slight extent of the damage done is attributed to the fact that all the plastering throughout the building had been removed from the ceiling and replaced by a single coating of whitewash, as it had been found that occasionally portions of the plastering became detached from the main body, and damaged not only the cases but sometimes even the specimens in their fall. Had the above precaution not been taken, irreparable harm would have been done;

(b) in the Economic and Art Section the only damage done was in the Artware Court, where several articles of Indian pottery fell from off the shelves on which they were placed and were more or less destroyed. Some of these specimens have already been replaced, but the purchase of the remainder has been kept in abeyance for want of funds although the cost of the whole damage did not exceed Rs. 200.

The whole of the buildings have been examined and the necessary repairs attended to by the Public Works Department.

7. The Superintendent of the Museum submitted a proposal to demolish the row of godowns at the back of his kitchen and stabling occupied by the menials of the School of Art, and to rebuild the same in another part of the Museum compound, on the ground of their disfiguring the southern view of the Museum buildings, and also on account of insanitation caused by the drainage of refuse water into the Museum tank. The Trustees inspected the buildings in consultation with the Under-Secretary to the Government of Bengal in the Public Works Department, himself also a Trustee, and decided that a slight alteration in the drainage should be effected so as to lead off

the water to the main entrance instead of into the tank And that when funds permitted the godowns under reference as well as the Superintendent's kitchen and stables should be removed and rebuilt in portions of the compound selected for that purpose.

8. On a proposal made by the Director of the Philadelphia Museum to effect an exchange of Economic Products between himself and the Museum, the Government of India requested to be favoured with the Trustees' opinion as to the advisability of making the Economic Collection which is at present mainly Indian, International, adding that in case such a procedure was not possible whether it might not be advantageous to take the opportunity such as the present occasion afforded of acquiring collections of such specific products of other countries as may be of value to the commercial public in Calcutta or to persons interested in Indian agriculture, such as for instance wheat, cotton, and maize from America. The Trustees after deliberation replied that considering the limited staff and accommodation at their disposal, they did not think that the proposal to transform the Economic Collection from an Indian to an International one at present called for any practical consideration. And further that whilst willing to enter into exchange of specimens such as mentioned above they regretted their inability to submit any definite proposals until the construction of the cases of the Economic Court had been completed and the collection arranged.

9. Twenty-six life sized clay figures which were in a very mutilated condition and beyond restoration were sold to a contractor at a nominal price—the best that could be obtained.

10. On the 10th April Dr. Bloch left Calcutta for Bihar on a preliminary inspection preparatory to his being deputed there to carry on Archæological excavations

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through the agency of famine relief workers. He returned on the 17th idem and submitted a report recommending the excavations being proceeded with. The project was sanctioned by the Trustees, but it unfortunately came to nothing owing to the difficulty experienced in obtaining proper accommodation for Dr. Bloch during the hot weather, the season during which the excavation would have had to be carried on.

11. Some correspondence also passed between the Asiatic Society of Bengal and the Trustees with regard to Dr. Bloch being deputed to carry on excavation work in collaboration with Dr. Führer of the Lucknow Museum in the Nepalese Terai in search of objects of antiquarian interest, with the result that the Trustees consented to Dr. Bloch's deputation provided the consent of the Government of India was obtained to the scheme. On the representation being made by the Society, the Government of India expressed their inability to help, and suggested attention being paid first to British districts adjoining the Nepalese Terai, adding that, should reliable information be received of the existence of any remains of Archæological interest across the border, the propriety of moving the Nepalese Durbar would be considered. On receipt of this reply the Trustees requested the Asiatic Society to favour them with a detailed scheme of operation for execution next cold season.

12. The weekly zoological demonstrations in the Museum have been as usual continued by the Superintendent. For use in these demonstrations some dissections and disarticulated preparations illustrating the morphology of invertebrates were purchased from Geneva, the cost being met from the grant placed at the disposal of the Trustees for educational purposes by the Government of Bengal.

13. Owing to Mr. F. Finn, the Deputy Superintendent, having taken privilege leave to England during the year he

was not able to proceed as in former years to the Forest School at Dehra Dun to deliver the annual lectures on Zoology. Surgeon-Captain J. W. Grant, Officiating Surgeon-Naturalist to the Marine Survey of India, was recommended for this purpose to the Inspector General of Forests at the instance of the Officiating Superintendent.

14. At the request of the Baroda State Museum, Dr. Watt was allowed to select and forward to that Institution, typical specimens of Bengal artware on the understanding that this Museum was put to no expense.

15. The Trustees desire to place on record the great loss they have sustained by the retirement from India and hence from their board of Sir George King, F.R.S., K.C.I.E., Superintendent of the Royal Botanic Gardens and Director of the Botanical Survey of India, and Colonel J. Waterhouse, I.S.C., Assistant Surveyor-General of India.

Sir George was connected with the Museum since 1887-88 and took a most active and energetic part in the administration of the Trust. He was Chairman of the Trustees from 1891-92 to 1893-94, retiring from the post in the latter year owing to increase of work in connection with the Botanical Gardens which left him very little time to devote to Museum work. From the commencement of 1897-98, to the date of his retirement he was Vice-Chairman of the Trustees.

Colonel J. Waterhouse has been associated with the Museum since 1875-76 and has always shown the greatest interest in its work and progress. He has since his election as a Trustee been on the various Committees and for different periods has been acting as Honorary Secretary and Honorary Treasurer. He has in addition been Chairman of the Trustees during the years 1888-89, 1895-96 and 1896-97.

ZOOLOGICAL AND ARCHÆOLOGICAL SECTION.

16. The registered acquisitions to the above section

during the year number 6,500 or 2,540 more than last year's total. The most important ones being from the following donors:—Marine Survey of India, Dr. R. Koehler of Lyons, the British Museum, the Turin Museum, Dr. A. R. S. Anderson, the Bombay Natural History Society, the Calcutta Zoological Gardens, Captain Webb-Ware, Capt. E. Pottinger, the Trevandrum Museum, and the Government of Bengal. The specimens themselves are referred to at length in the Superintendent's report attached.

17. The additions to the Library number 1,110 being made up as follows:—purchases 522 and donations 588. On comparison with last year's total it shows a decrease of 96 in the aggregate being 3 and 101 under purchases and donations respectively.

18. The principal additions and improvements effected in the different Galleries are as follows:—

Bird Gallery.—In this Gallery are exhibited specimens—

(i) of the White Crested Poland Hen, the Common Indian Jungle Cock and Hen, the Japanese Bantam Cock, and the Malay Cock to illustrate variation in tame birds;

(ii) a spirit dissection of the brain of a bird, and

(iii) of a preparation of the wind-pipe and tongue, etc., of certain birds.

All the Entomological specimens which were displayed in this Gallery have been removed for re-arrangement to the new Entomological Gallery, the fittings of which it is hoped will soon be put in hand.

Invertebrate Gallery.—Among the exhibits which were added to this Gallery the most noteworthy are:—

(i) an Index Collection of the genera of Indian Cancroid Crabs;

(ii) specimens of deep-sea Corals and Ophiuroids, and
(iii) a large series of disarticulated Orthropod "types."

All the Entomological exhibits have also been removed from this Gallery for the same reason as stated above.

Besides the abovementioned exhibits several other specimens and preparations have also been added to the Galleries.

Archæological Gallery.—

(i) The Mathura sculptures from the south-west corner room have been removed to one of the bays in the Gupta Gallery, so as to leave room for the storage of some of the Swat Valley collections of Buddhistic sculptures;
(ii) a Buddhistic Stupa has been restored, and
(iii) a door has been re-opened leading to the new Asoka Gallery.

Asoka Gallery.—On the Superintendent reporting that the work of arranging the casts of the Asoka inscriptions had been completed, the Gallery was inspected by the Visiting Committee of the Trustees, who expressed themselves highly satisfied. It is proposed to hang near each cast a photograph showing the original inscription and its surroundings.

19. Papers by Drs. R. Koehler and T. Bloch and Mr. F. Finn have been published during the year. Some of them referred to Museum specimens and the remainder were contributions to Indian Zoology and Archæology. The most important was the paper by Dr. R. Koehler, entitled "Ophiures de l'Ocean Indien." In addition to the above the manuscript of a paper by Surgeon-Major Alcock, called "Materials for a Carcinological Fauna of India, No. III Brachyura Cyclometopa," has been completed. In this paper 140 species contained in the Museum collection are fully described and the new species figured. A fifth fasciculus of the "Illustra-

tions of the Zoology of the Royal Indian Marine Steamer "Investigator" was issued during the year, and the drawings for the sixth fasciculus were prepared and sent to press.

20. Work on the following official publications of the year was continued with the following result:—

(*a*) Indian Museum Notes, Vol, IV. No. 2, has been issued, and the manuscript of No. 3 has been sent to press;

(*b*) the Second Supplementary Library Catalogue compiled by Mr. H. B. Perie has been issued;

(*c*) Dr. Koehler's Monograph on the Ophiuroidea is in press;

(*d*) the preparation of an amalgamated list of the Photographic Negatives stored in the Museum, of ancient buildings in India, has been handed over to Dr. Bloch, the First Assistant to the Superintendent, for execution on a principle drawn up by him and the Chairman to meet the wishes of the Government of India, who have been consulted and have approved of the plan. The Trustees hope in their next report to announce its completion, and

(*e*) the Manuscript of a "Monograph on the deep-sea Madreporaria collected by the Investigator" has been completed by Surgeon-Major Alcock. In this publication 21 species of deep-sea Corals are described, most of them being new to science, and all being represented in the Museum.

21. List of the accessions to the various sections of the Museum are given in detail in the Superintendent's report attached.

22. The Trustees have again to record their thanks to the several volunteers who have so readily helped in the different branches of Zoology and Archæology. Among these may be mentioned the names of Lord Walsingham, Sir G. F.

Hampson, Bart., Messrs. G. B. Buckton, J. Desbrochers des Loges, Regimbart M. Jacoby, and E. Brenske, Dr. R. Koehler, Professor Jeffrey Bell, and Mr. Edgar A. Smith of the British Museum.

23. The Trustees have noted with satisfaction the benefit derived by the Museum from the exchanges effected with (1) the British Museum, (2) the Turin Museum, (3) Dr. R. Koehler, (4) the Australian Museum, (5) the Aberdeen Museum, (6) the Cambridge University, (7) the Paris Museum, (8) the Trevandrum Museum, and (9) Mr. L. White King.

24. The following specimens of birds which had been received from the Asiatic Society of Bengal have been destroyed along with a few others as being in a very bad condition.

No. 1430. C. D. *Turtus risorius.*

" " G. " " , var. *alba.*

" 947. A. *Merula boulboul.*

" 1781. B. *Querquedula circia.*

" 121. D. *Pontoœtus ichthyaetus.*

A few useless and superfluous specimens of the Brachyura Cancroidea have also been destroyed.

25. At the instance of the Government of India, the Government of Madras was furnished with a note drawn up by the Entomological Assistant regarding the proposed importation into that presidency of Lady birds and other natural enemies of the insect pests which were infesting Indian plantations and further assistance was promised.

26. With the consent of the Government of India some woodblocks belonging to the Indian Museum Notes illustrating Forest insects were lent to Mr. E. P. Stebbing of the Forest Department, in connection with a book he was compiling on Indian Forest insects.

27. Some specimens of mollusca were lent to Lieut.-Col.

H. H. Godwin-Austen who asked for them for the object of working out their anatomy and identification.

28. Surgeon-Captain A. R. S. Anderson was in charge from the commencement of the year to the 6th October when he was relieved by Surgeon-Major A. W. Alcock. The time of these two officers was fully occupied in superintending the work of the Entomological and Taxidermist Departments; in delivering lectures at the Medical College, and demonstrations weekly in Zoology to the Students of the Medical College at the Museum; and in making dissections, etc., for the Invertebrate Gallery. Surgeon-Major Alcock's time was in addition employed in correcting proofs of Dr. Koehler's Monograph of the deep-sea Ophiuroidea; identifying and registering Invertebrates and Fishes; in determining the Brachyura Cancroidea for the Crustacea Catalogue; and in writing several papers in connection with the Museum Collections.

29. Mr. F. Finn, the Deputy Superintendent, was engaged during the whole of the year, except the time he was on leave, in arranging the reserve study collection of birds' skins in the new East Wing according to the classification adopted in the Handbooks to the Fauna of British India; in preparing the Handlist of birds; in arranging the Mammal Collection in the new East Wing; in preparing dissections, etc., for exhibition in the Bird and Mammal Galleries; in naming a large collection of scorpions received from the Bombay Natural History Society; in naming specimens for various enquirers; and in writing a large number of papers for publication. He left for England on three months' privilege leave on the 5th August and returned on the 3rd November.

30. Dr. T. Bloch, the First Assistant to the Superintendent, has been engaged throughout the year in superintending the preparation of the casts of the Asoka inscriptions

and in ultimately arranging them in the Asoka Gallery; in effecting alterations in the Archæological Gallery; in deciphering coins; in writing some papers on Archæological subjects; and in preparing the amalgamated list of the Photographic Negatives stored in the Museum, of ancient buildings in India. In January last he passed the High Proficiency Standard in Persian. He officiated as Deputy Superintendent during the time that Mr. Finn was on privilege leave.

31. Mr. H. B. Perie, the Librarian, who was officiating as Superintendent of Ledgers in the Office of the Reporter on Economic Products, reverted to his substantive appointment as Librarian on the 23rd May. He availed himself of three months' privilege leave from the 2nd June, returning to duty on the 2nd September. He was appointed Registrar to Trustees *vice* Mr. H. W. Fleming resigned, from the 3rd November.

32. Mr. C. O. Bateman officiated as Librarian during the absences of Mr. Perie. He was appointed Librarian on probation *vice* Mr. H. B. Perie, from the 3rd November.

33. Mr. E. Barlow has as usual continued to carry on the work of the Entomological Section under the supervision of the Superintendent.

34. The Trustees have again to record their high appreciation of the excellent work performed by the staff of the Zoological and Archæological Section. To Surgeon-Major Alcock their thanks are expressly due for the interest he takes in the welfare of the Museum, which he has always endeavoured to promote not only in India but also during his leave of absence in England.

ECONOMIC AND ART SECTION.

35. From the report of the Officer in charge, on the work

executed during the year in the three Galleries which comprise this Section, are the following remarks noticed :—

Economic Gallery.—1,470 specimens were received and registered, and no less than 754 duplicates were despatched to the Imperial Institute, London, in the usual way. The principal additions have been dealt with fully by the Officer in charge in his report attached. The chief work done in this Gallery appears to have been the arrangement of the specimens in their respective cases. Mention may be made of a large collection of oils having been displayed in white glass-stoppered bottles, and it is now possible to show to a visitor any special oilseed he may be interested in, and side by side of it the oil obtained from it, and the cake left after the expression of the oil. The Medicine and Dyes and Tans bays are nearly complete, and the arrangement of the Mineral bay has been started. After consultation with the Trustees an offer of the North West Soap Company for depositing an ornamental show case containing specimens of all the different kinds of manufactures of the Company was accepted, on the condition imposed by the Company, that they could remove it whenever it would be required for any exhibition, etc. It is now placed between the bays devoted to oils and oilseeds and forms a very attractive feature of the Gallery. The work of marking the scientific names on some of the cases has been completed, and to counteract the action of the damp weather it has been found necessary to brush them over with a coating of white varnish. Samples of products from the surplus stock have been forwarded to the Economic Museum at the Kew Gardens, London, and to the Frankfurt Museum. Although the Gallery is not open to the public, persons interested in different products are taken over the place and allowed to examine the subjects sought after. On the 18th December some members of the Bengal Chamber of Commerce were shown over the Gallery

and expressed themselves greatly pleased. The Secretary has since written to say that the Chamber will be glad to assist in contributing specimens. The Trustees regret to notice that the central glass cases have not as yet been commenced by the Public Works Department, and a large quantity of materials are in consequence awaiting accommodation. A good many analyses were performed by the Curator for this Court.

Artware Court.—The number of additions made to this Court has been enumerated in the report of the Officer in charge. The damage effected to this Court by the recent earthquake has been mentioned elsewhere. A large number of metal manufactures which were thought to be more adapted for exhibition in the Ethnology Court were transferred to that Court. Students from the School of Art have been allowed permission to make drawings in this Court. The collections are reported to be in good condition.

Ethnology Court.—The acquisitions to this Court number 116 specimens which are detailed at length in the report of the Officer in charge. This court has also to some extent undergone rearrangement after the specimens had been thoroughly cleaned. Additional attraction has been given to it by the exhibition of portraits of the Native Rulers of India, flags of Burmese origin obtained from a temple in Assam, photos of typical Indian Races, and different other pictures relating to Ethnological subjects. A fine collection of Indian Postal Stamps received by the office of the Reporter on Economic Products from the Government of India and subsequently made over by that office to the Economic and Art Section has been exhibited. The work of renaming the figures of the Hindu deities, which entailed a considerable amount of labour by way of reference, was also taken in hand and with the valuable assistance rendered by Dr. Bloch successfully carried through.

36. Mr. W. R. Yates was sub. *pro tem.* Assistant Curator from the beginning of the year to the 22nd May, after which date he was relieved by Mr. Hooper whose appointment to the post has already been dealt with.

37. The Trustees desire to acknowledge the good work performed by the staff of the Economic and Art Section.

TRUSTEES' OFFICE.

38. Mr. H. W. Fleming, the Registrar, remained in charge of the Trustees' Office up to the 3rd November when he resigned his appointment being succeeded by Mr. H. B. Perie, the Librarian.

39. The accounts for the year have been duly audited and passed. Abstracts of the receipts and the expenditure in both sections are appended.

THE COLLECTIONS.

40. The collections are believed to be in good order and preservation.

G. H. KUCHHIR,
Honorary Secretary.

H. H. RISLEY,
Chairman.

Abstract of Receipts and Expenditure of the Zoological and Archæological Section of the Indian Museum from 1st April 1897 to 31st March 1898.

Receipts	Rs. a. p.	Rs. a. p.	Expenditure	Rs. a. p.	Rs. a. p.
India Government grant for pay of non-gazetted establishment.		15,330 6 0	Pay of non-gazetted establishment .		15,330 6 0
India Government grant for Contingent charges for the year 1897-98 . .	14,933 0 0		Temporary establishment including allowance to menials for dearness of food grains		2,648 2 2
Savings on gazetted establishment, 1896-97	2,588 5 3		Books for Library		3,277 15 2
Savings on non-gazetted establishment, 1896-97	180 12 3		Printing		767 12 1
		17,702 1 6	Purchase of specimens . . .		393 11 10
			Postage		292 13 6
Bengal Government grant for weekly demonstration on Zoology to students of the Medical College in the Indian Museum		600 0 0	Unusual charge:— Deputation		264 3 11
Bengal Government grant for the transport of the Swat, Dargai and other sculptures forwarded by Mr. A. E. Caddy, to the Indian Museum . .		1,354 6 0	Packing and freight		1,648 0 4
Sundry petty receipts		952 10 3	Furniture (cases, jars, etc.) . .		1,100 13 6
			Drugs (alcohol, naphthaline) . .		457 6 0
			Stationery		333 13 3
			Special Museum stores . . .		457 8 3
			General Museum stores and contingencies		665 2 4
Total Receipts.		35,939 7 9	Total Expenditure . .		27,642 12 4
Opening balance of suspense accounts, 1st April 1897	709 13 11		Closing balance of suspense accounts, 31st March 1898 (to be recovered or accounted for in 1898-99) . . .		16,141 9 1
Opening balance at Bank of Bengal, 1st April 1897	26,517 7 0		Closing balance in bank, 31st March 1898	*19,315 0 6	
Cash in hand, 1st April 1897	101 8 11		Cash in hand, 31st March 1898 . .	163 15 8	
		27,328 13 10			19,484 0 2
		63,268 5 7			63,268 5 7

* Exclusive of a balance of Rs. 187-0-4 on account of the Investment Account as being its interest.

H. B. PERIE,
Registrar

OMRITO NATH MITTER,
Honorary Treasurer.

Funds for publication of Catalogues, 1897-98.

Dr. | *Cr.*

	Cash.	Government securities.		Cash.	Government Securities.
	Rs. a. p.	*Rs. a. p.*		*Rs. a. p.*	*Rs. a. p.*
To amount transferred from the General Funds of the Zoological and Archæological Section for investment in Government Securities	10,828 14 0	...	By amount paid for the purchase of Government Securities for Rs. 11,000 . .	10,828 14 0	
To amount of Government Securities purchased as per contra . . .	...	11,000 0 0	By Balance	187 0 4	11,000 0 0
To interest on 3½ per cent. Government Securities for Rs. 11,000 . . .	187 0 4	...			
	11,015 14 4	11,000 0 0		11,015 14 4	11,000 0 0

H. B. PERIE,
Registrar.

OMRITO NATH MITTER,
Honorary Secretary.

Abstract of Receipts and Expenditure of the Economic and Art Section of the Indian Museum from 1st April 1897 to 31st March 1898.

	R a. p.	R a. p.
Bengal Government grant for non-Gazetted establishment	5,272 14 6	......
Bengal Government grant for allowance to menials for dearness of food grains	342 2 6	......
		5,615 1 0
Bengal Government grant for contingencies	2,784 0 0	......
Savings on gazetted and non-gazetted establishments 1895-96	1,174 10 1	......
Sundry petty receipts	113 11 6	......
		4,072 5 7
Total Receipts on Museum Account		9,687 6 7
Sale of Archæological Drawings (Technical Art Series) on behalf of India Government	0 4 0	......
Sale proceeds of Government Securities of Ahsunnullah-Swarnamoyee Memorial Fund	7,330 5 11	......
Amount transferred from Ahsunnullah-Swarnamoyee Memorial Fund being the opening balance of that Fund 1897-98	507 10 3	......
		7,837 4 2
Total Receipts on all Accounts		17,534 10 9
Opening Suspense Account balance 1st April 1897	......	101 10 0
Opening balance in Bank, 1st April 1897:—		
Austrian Government grant for Ethnological specimens	277 4 3	......
Economic and Art Section General Funds	14,109 12 0	......
		14,387 0 3
Cash in hand, 1st April 1897	......	73 15 3
		32,097 4 3

	R a. p.	R a. p.
Pay of non-gazetted establishment	5,279 14 6	
Allowance to menials for dearness of food grains	342 2 6	
		5,622 1 0
Pay of temporary establishment	......	1,150 6 10
Purchase of specimens	......	373 4 6
Furniture, cases, etc.	......	20,518 3 6
Stationery	......	111 0 3
Other contingencies	......	2,047 14 9
Total Expenditure on Museum Account		29,822 14 10
Total Expenditure on all Accounts	......	29,822 14 10
Closing Petty Suspense Account balance	......	1 10 0
Closing balance in Bank, 31st March 1898:—		
Austrian Government grant for Ethnological specimens	277 4 3	
Photo-Litho Office (sale proceeds of Archæological Drawings, Technical Art Series)	0 4 0	
Economic and Art Section General Funds	1,972 11 10	
		*2,250 4 1
Cash in hand, 31st March 1898	......	22 7 4
		32,097 4 3

* Exclusive of Rs. 8-8-8 and Rs. 176-0-4 at credit of Ahsunnullah-Swarnamoyee Memorial Fund and Calcutta International Exhibition Fund respectively.

H. B. PERIE,
Registrar.

OMRITO NATH MITTER,
Honorary Treasurer.

Ahsunnullah-Swarnamoyee Memorial Fund 1897-98.

Dr. — *Cr.*

Dr.	Cash.	Government Securities.	Cr.	Cash.	Government Securities.
To balance in Bank of Bengal .	507 10 3		By amount of 3½ per cent. Government Securities sold as per contra . . .	...	7,200 0 0
Ditto ditto .		7,500 0 0	By amount paid to the Executive Engineer, 1st Calcutta Division in part satisfaction of the claim for fittings of the Economic Court . .	7,847 0 2	...
To sale proceeds of 3½ per cent. Government Securities for Rs. 7,200 including interest up to 1st June 1897 . .	7,339 5 11	...	By balance . . .	8 8 8	300 0 0
To interest on Government Securities of 3 per cent. for Rs. 300	8 8 8	...			
	7,855 8 10	7,500 0 0		7,855 8 10	7,500 0 0

H. B. PERIE,
Registrar.

OMRITO NATH MITTER,
Honorary Treasurer.

Calcutta International Exhibition Fund 1897-98.

	Cash.	Government Securities.		Cash.	Government Securities.
	R A. P.	R A. P.		R A. P.	R A. P.
To Balance	141 3 4	1,200 0 0	By Balance	176 0 4	1,200 0 0
" Interest on Government Securities of Rs. 1,200 @ 3 per cent.	34 13 0	...			
TOTAL .	176 0 4	1,200 0 0		176 0 4	1,200 0 0

H. B. PERIE,
Registrar.

OMRITO NATH MITTER,
Honorary Treasurer.

G. I. C. P. O.—No. 161 . M.—10-11-98.—120.—B. M.

N

REPORT OF THE SUPERINTENDENT

For the Year 1897-98.

Superintendent.

I have the honour to submit my report for the year ending 31st March 1898.

I.—GENERAL.

Dr. A. R. Anderson officiated as Superintendent, during my absence on furlough, until the 6th October, when I resumed charge of the office. In addition to the duties of general supervision, the Superintendent had charge of the collections of Fishes, of all Invertebrates except Insects, and joint charge of the collection of Reptiles, in which duties he was assisted by Mr. J. B. Richardson.

Mr. F. Finn was Deputy Superintendent throughout the year, but was on privilege leave—Dr. Bloch officiating for him—from the 4th August 1897 to the 4th November 1897. Mr. Finn had charge of the collections of Land Vertebrates and had occasional assistance, whenever he required it, from Assar Munshi and the Taxidermists.

Dr. T. Bloch was First Assistant, and also officiated as Deputy Superintendent during the absence of Mr. Finn. Dr. Bloch had charge of the Archæological collections, and had Munshi Kassimuddin to assist him.

Mr. E. Barlow was Entomological Assistant and had charge of the Entomological collections and of all inquiries relating to Insect Pests. He had the entomological draughtsman working directly under him.

The reports of these officers are submitted in original.

Mr. H. B. Perie was Librarian from the 23rd May 1897 to the 1st June 1897, and from the 2nd September 1897 to the 2nd November 1897. Before and after these dates Mr. C. O. Bateman officiated for him. The Librarian was assisted by Mr. H. E. Soler and Munshi Assar Husain.

Mr. C. Swaries was Head Taxidermist and Storekeeper, and had to assist him Taxidermists A. Martin, J. H. Pereira and O. Thomas.

During my absence I visited several Museums in Europe, and worked for some time at the British Museum (Natural History), where I was allowed to select a large number of 'Challenger' Duplicates of *Crustacea*, besides several species of *Peneidæ*, for our Museum.

Our chief aims during the year have still been (1) to improve the educational value of the Galleries, and (2) to get our collections, especially of Invertebrates, catalogued; but with our limited staff the latter aim must remain unfulfilled for many years to come.

During the year the following important events have occurred :—

1. The Geological Survey has removed its offices

from the Museum building. This has put three new exhibition galleries at our disposal—two vacated by the Survey, and one restored to its proper use by the removal of the Entomological collections from it to the old draughtsmen's rooms of the Survey. Of these new Galleries, one is already under arrangement as an Entomological Gallery; one is to be a Fish Gallery; and the third will be a much-needed addition to the Reptile Gallery. All that is needed are fittings.

2. The reserve collections, with the exception of Reptiles, Shorefishes, and Archæology, have been removed to the new Elliott block.

Fortunately the earthquake of the 12th June was not, so far as we are concerned, an important event: beyond causing a few old cracks to open out and innocuously discharge the plaster with which they had been filled, it did not affect the buildings.

II.—ACQUISITIONS.

The registered acquisitions number 6,500, of which 5,719 are Zoological and 781 Archæological. The acquisitions to the Library number 1,109, and our chief object this year, as during the two previous years, has been to acquire books that are necessary for our work.

The most important sources of our Zoological acquisitions were:—

(1) The Marine Survey of India, who have given us collections of deep-sea Fishes and Invertebrates that in

number, variety and interest almost equal those presented by the Survey in 1891:

(2) Dr. R. Koehler, of Lyon, who has sent, in exchange, a large collection of named Invertebrates and Fishes from the Gulf of Gascony ("Caudan Expedition"), and, as a donation, beautifully preserved specimens of 28 named species of Fishes from the Rhone basin:

(3) The British Museum, the Trustees of which have given specimens of 76 species of Crustacea, most of which are named 'Challenger' Duplicates:

(4) The Turin Museum, which has also sent us named Crustacea in exchange:

(5) Dr. A. R. Anderson, who has presented a collection of Land and Freshwater Vertebrates and Invertebrates from the little-known country between Moulmein and Rangoon:

(6) The Bombay Natural History Society, who, through the intervention of Mr. L. deNicéville, sent us a large collection of unnamed Scorpions:

(7) Mr. W. Rutledge, of Entally, who, as in former years, has taken the trouble to send us everything of any interest that dies in his yards:

(8) The Superintendent of the Zoological Gardens, Alipore, who also gives us timely notice of his deaths:

(9) Captain E. Pottinger, R.A., who made a collection of Birds for us in Upper Burma:

(10) Captain Webb-Ware, who sent us some very rare Reptiles from Western Baluchistan:

(11) Numerous purchases of Mammals, Birds, Fishes and Arthropoda made by Mr. Finn in London and by myself in London and Geneva: these were all "types" that were much needed for study and for teaching purposes:

(12) The Trevandrum Museum, who have sent named Snakes and unnamed Crustacea as an exchange.

Our Archæological acquisitions are—(1) the Swat Valley Sculptures presented by the Government of Bengal, received last year, but only lately registered, and (2) Coins presented by the different Local Governments.

It has been the custom, of late years, to mention such acquisitions as have a special interest, and all types of new species added to the collections. This year the following have to be noticed:—

Mammals.—Mounted skeletons of Hippopotamus and adult male Chimpanzee. Mounted skins of Snow-leopard, Cheetah, Aye-aye, Three-toed Sloth, Opossum, and Thylacine.

Birds.—Skeleton of Turkey-Buzzard, skins of Mrs. Gould's Finch (1 mounted), Nicobar White Mynah, Hoactzin (mounted).

Reptiles—Spirit specimens of *Ophisaurus*, *Pseudocerastes*, *Eristicophis*, *Teratoscincus*.

Amphibia and *Fishes.*—Spirit specimens of *Pipa*, *Ceratodus*, *Lepidosiren*, *Protopterus*.

Mollusca.—Specimens of *Mulleria dalyi*, Smith, *Verticordia eburnea*, W.-M. and Alc.

Insecta.—The following types of new species of Melolonthine beetles, all instituted by Herr E. Brenske, of Potsdam, Germany :—

Ancylonycha nigropunctata, Brahmina flabella, Brahmina obscura, Brahmina sikkimensis, Brahmina thoracica, Holomelia mirabilis, Holotrichia flavoserica, Holotrichia iridipennis, Holotrichia pilosa, Holotrichia plagiata, Holotrichia scabrifrons, Holotrichia scrobiculata, Otoclinus gracilipes, Rhizotrogus beludschistanus, Serica andamana, Serica insularis, Serica fumosa. And the Aphid type *Chitophorus maculatus,* Buckton.

Crustacea.—Space is too limited for the enumeration by name of all the choice acquisitions of the year, and the collections have not been sufficiently carefully examined to speak decisively about new species. But among the numerous recent deep-sea discoveries of the Investigator the following very interesting additions to our collections have been recognized :—The true *Pylocheles* of A. Milne-Edwards, *Paralomis, Trachycarcinus, Carcinus, Spongicola,* and some fine adult males—which now modify and complete our knowledge of the genus—of *Echinoplax.*

Echinoderma.—The following types of new species instituted by Dr. R. Koehler of Lyon have been acquired :—

Ophiotypa simplex (representing a new genus of the simplest and most embryonic type known), *Ophiopyrgus alcocki, Ophiomastus tumidus, Ophioglypha inflata, paupera, sordida, involuta, Ophiomusium familiare*

and *elegans*, *Ophiopyren bispinosus*, *Ophiolypus granulatus*, *Ophioceramis tenera*, *Ophiozona bispinosa*, *Ophiopeza custos*, *Pectinura conspicua*, *Ophioconis indica*, *Ophiactis perplexa* and *lorioli*, *Amphiura caulleryi*, *frigida*, *dispar*, and *partita*, *Ophiochiton ambulator*, and *modestus*, *Ophiacantha pentagona*, *vestita*, *gratiosa*, *sociabilis*, *composita*, *duplex* and *vorax*, *Ophiomitra integra* and *rudis*, *Ophiomyxa bengalensis*, *Gorgonocephalus levigatus* and *cornutus*.

Cœlentera.—The following types of new species of deep-sea Madreporaria must be noticed :—

Caryophyllia ambrosia and *paradoxus*, of the latter hundreds of specimens were dredged ; *Trochocyathus rotulus*, *Thecocyathus cincticulatus*, *Desmophyllum vitreum* (hundreds of specimens), *Lophohelia investigatoris*, *Cyathohelia formosa*, *Solenosmilia Jeffreyi*.

We have also acquired for the first time and from Indian seas the true *Caryophyllia communis*, and among the *Hydrozoa*, beautiful specimens of *Cryptohelia pudica*.

The more important Archæological acquisitions are enumerated in Dr. Bloch's Report.

III.—PUBLICATIONS.

A.—OFFICIAL.

Indian Museum Notes, Vol. IV, No. 2, has been issued and No. 3 has been sent to press. As in the past three years, the management of this useful publication has this year also been left in Mr. Barlow's hands, and the

supervision which was at first necessary to make it more methodical and systematic—after the manner of Miss Ormerod's Annual Reports—is every year becoming less insistent.

2. The second supplementary Catalogue of Books in the Library, compiled by Mr. H. B. Perie, has been issued.

B.—Non-Official.

1. Of non-official publications, the immediate object of which is to discover the value of our collections, there has only appeared during the year Dr. R. Koehler's "Ophiures de l'Ocean Indien." This is a monograph of the deep-sea Ophiuroidea presented to the Museum during the last twelve years by the Marine Survey Department: in it 55 species are named, of which about 40 are types of new species.

In addition to this, the MSS. (1) of the third part of my "Materials for a Carcinological Fauna of India" and (2) of my Report on the deep-sea Madreporaria collected by the Investigator have been completed.

In the former, about 140 species of Cancroid Crabs contained in the Trustees' collections are fully described and the new species figured. In the latter 25 species of deep-sea Corals are described, most of them being new to science, and all of them being represented in the Museum.

The drawings for the sixth year's issue of "Illustrations of the Zoology of the Investigator" have been prepared and sent to press during the year.

Of non-official papers which, though they do not touch our collections, are contributions to Indian Zoology, nine have been published by Mr. Finn and are mentioned in his Report.

In addition to these, Dr. Bloch has published some papers on Archæological subjects, which are mentioned in his Report.

Our thanks are due to the following gentlemen for assistance in preparing our publications:—to Lord Walsingham, Sir G. F. Hampson, Bart., Messrs. G. B. Buckton, J. Desbroches des Loges, Regimbart, Martin Jacoby and E. Brenske for identifications of Insects: to Dr. R. Koehler, of Lyon, for Ophiuroidea: to Messrs. Jeffrey Bell and Edgar Smith, of the British Museum, for marine Invertebrates.

IV.—EXCHANGES.

During the year under report we have received the following:—

(1) from the British Museum—76 species of named Crustacea:

(2) from the Turin Museum—48 species of named Crustacea:

(3) from Dr. R. Koehler, of Lyon,—numerous duplicates of marine Invertebrates and Vertebrates from the Gulf of Gascony.

During the year we have sent out the following :—

(1) to British Museum—named Indian Crustacea, Echinoids, Mollusks and Corals :

(2) Florence Museum—Mammals and Reptiles :

(3) Smithsonian Institution—spirit specimens of Birds :

(4) to Turin Museum—*Oxyrhynch* and *Oxystome Crustacea* :

(5) Dr. Koehler, of Lyon,—41 species of deep-sea Ophiuroidea.

In addition, we have made small exchanges with the Australian Museum, the Museums of Aberdeen and Cambridge Universities, the Paris Museum, and the Trevandrum Museum.

V.—THE GALLERIES.

Numerous mounted skins and skeletons, and several dissections, have been added to the Mammal and Bird Galleries.

All the Insects have been removed from the Invertebrate and Bird Galleries in order to be re-arranged for the new Entomology Gallery: this change has much improved both the looks and the convenience of the Galleries named.

To the Fish Gallery several dissections and spirit mounts have been added.

In the Invertebrate Gallery have been put up (1) an index collection of the genera of Indian Cancroid Crabs, (2) a set of deep-sea Corals, (3) some types of deep-sea Ophiuroids, (4) a large series of disarticulated Arthropod "types."

In the Archæological Galleries numerous improvements have been made by Dr. Bloch: (1) the Mathura sculptures have been removed to one of the bays, leaving the south-west corner gallery entirely free for an extended exhibition of our large collection of Buddhistic sculptures from the Swat Valley: in the centre of this Gallery, a restored Buddhist stupa has been erected. (2) The new Asoka Gallery has been completed.

VI.—MUSEUM STAFF.

Mr. F. Finn, Deputy Superintendent, submits the following report:—

"During the past year my time has been chiefly taken up with the care of the reserve collections of Land Vertebrates, which have been moved into the new East block, the Bird collection in particular, which is in the course of final re-arrangement with a view to the completion of the Hand-List of this collection. This, it is expected, will be finished during the present year.

"The Mammal collection has been arranged in its room in the new building by Assar Munshi under my supervision.

"Some additions have been made to the Bird Gallery during the past year, both of stuffed specimens in the side and centre cases, and anatomical preparations in the centre ones. Among the latter, attention is directed to those illustrating the structure of the tongue and windpipe in certain birds, and to the wing of a vulture, dissected to show the relation of the quill feathers to the bones of the limb. Among the new stuffed specimens may be noticed a fine example of the Sarus Crane presented by the Alipore Zoological Gardens, and a pair of the remarkable South American Hoactzin (*Opisthocomus hoazin*) purchased from Mr. E. Gerrard, of London.

"In the Mammal Gallery several stuffed specimens of interesting Indian and exotic forms purchased from Messrs. Rowland Ward and E. Gerrard have been exhibited. These comprise examples of the Brown and Himalayan Bears, the Cheetah and Snow Leopard, and specimens of American monkeys (*Cebus fatuellus* and *Nyctipithecus trivirgatus*), a Sloth (*Bradypus tridactylus*), a Lesser Anteater (*Tamandua tetradactyla*), an Aye-aye (*Chiromys madagascariensis*), a *Thylacinus*, much superior to the specimen previously obtained from the Tasmanian Museum, and an American Opossum (*Didelphys marsupialis*). A Tree Kangaroo (*Dendrolagus inustus*) from the Zoological Gardens at Alipore is also exhibited.

"I was absent on three months' privilege leave during August, September and October, and, while in

London, was entrusted with the arrangements for purchasing some of these specimens.

"Among the additions to the reserve collection of Mammals during the past year may be noticed the following :—

Specimens of Squirrels (*Sciurus atrodorsalis, Sciurus phayrei,* and *Sciurus locroides*) and Bats (*Nyctinomus plicatus, Taphozous melanopogon* and *Pteropus nicobaricus*), collected and presented by Dr. A. R. S. Anderson.

Spirit specimens of the Little Anteater (*Cycloturus didactylus*) and Tarsier (*Tarsius spectrum*) and a skin of the rare smaller Gymnura (*Hylomys suillus*) procured from Mr. E. Gerrard.

"Among the Birds the most noteworthy additions are :—

A collection from Upper Burmah, presented by Capt. E. Pottinger. A fine series of Baer's Pochard (*Nyroca baeri*) obtained from the Provision Bazar by me.

A pair of the excessively rare Nicobar White Mynah (*Sturnia erythropygia*) purchased from Mr. A. L. Butler.

A series of Mrs. Gould's Finches (*Poephila gouldiae*) presented, with many other birds, by Mr. W. Rutledge.

Few additions have been made to the Reptile collection, but mention may be made of :—

A fine specimen of the Hornless Cerastes (*Cerastes vipera*) from Egypt, and of a limbless Lizard (*Ophisaurus apus*) from the Alipore Zoological Gardens.

A very fine and large specimen of *Coluber oxycephalus*, collected and presented by Dr. A. R. S. Anderson.

"In addition to my work on Vertebrates, which included identifications of Turtles for Mr. F. W. Maxwell, and Birds for various enquirers, I have been occupied in naming a large collection of Scorpions sent to the Museum by the Bombay Natural History Society.

"During the past year I have been the author of the following papers in the publications of the Asiatic Society :—

1. Note on the Gait of the Cotton Teal, with exhibition of living specimens. Proceedings, Asiatic Society of Bengal, 1897, pages 81-83.

2. On some noteworthy Indian Birds, Journal, Asiatic Society of Bengal, Part II, 1897, pages 523-528.

3. Contributions to the Theory of Warning Colours and Mimicry. No. III, Experiments with a Tupaia and a Frog. Journal, Asiatic Society of Bengal, Part II, 1897, pages 528-533.

4. Note on the Indian Goosander (*Merganser comatus*), with exhibition of living specimen. Proceedings, Asiatic Society of Bengal, 1898, pages 103 and 104.

5. On certain imperfectly known Points in the Habits and Economy of Birds. No. I on the position of the feet of the "Picarian" Birds and of Parrots in flight. Proceedings, Asiatic Society of Bengal, 1898, pages 104-107.

"And in course of publication :—

6. Contributions to the Theory of Warning Colours and Mimicry. No. IV, Experiments with various Birds.

Summary and Conclusions. Journal, Asiatic Society of Bengal, Part II, 1897, pages 613-668.

7. Notes on various species of Grebes, with special reference to the powers of walking and digestion possessed by those birds, with exhibition of photograph and specimen.

8. On the seasonal change of plumage in the male of the Purple Honey-sucker (*Arachnechthra asiatica*) and of an analogous American bird, the yellow-winged Sugar-bird (*Coereha cyanea*), with exhibition of specimens.

9. Note on the Long-snouted Whip-snake, with exhibition of specimen and drawing.

"In going through the reserve collection of birds it was found necessary to destroy some specimens, twenty-two in number, but none of any importance. A stuffed specimen of the Indian Great Bustard was also destroyed, but has been replaced by a better."

Dr. T. Bloch, First Assistant, submits the following report on the Archæological Section :—

"*New Acquisitions :*

"A large collection of sculptures excavated in 1896 by order of the Government of Bengal, at the instance of Dr. Waddell, from the Lorian Tangai Stupa in the Lower Swat Valley. They are all Buddhistic, and belong to the so-called Græco-Buddhistic, or Gandhara school of Indian Art.

(*b*) Pillar-Inscriptions of Allahabad, Lauriya Navandgarh, and Lauriya Arraraj;

(*c*) The so-called 'new Edicts' of Siddapur (Version A and B), and of Sasseram;

(*d*) Cave-Inscriptions of Barabar and Nagarjuni Hill Caves;

(*e*) Inscription of Nigliva-Pillar;

(*f*) Hathigumpha, or Udayagiri-Inscriptions of Kharavela.

"Three inscriptions are wanting among this collection, of which it would be desirable to have casts, *viz.* :—

(*a*) the Paderia Edict of Asoka;

(*b*) the Rupnath Inscription;

(*c*) the separate (vii) edict of the Delhi Siwalik Pillar. Arrangements have been made to procure moulds of these three inscriptions, to be casted here in Calcutta.

"*Papers published by myself, including such as are in preparation:*

(*a*) A List of Photographic Negatives, stored up in the Museum. This work has been taken up, but is not finished yet. The List will be arranged geographically, according to Province and District, and it will also contain the references available, as to where the plates have been figured or described.

(*b*) A paper on an ancient Buddhistic statue from Gravasti will be published in No. 2 of the Journal, A. S. B., 1898; it was read at the Society's meeting in March 1898. The statue is in the Museum. The

pedestal contains an inscription, from the characters of which it may be ascribed to the last century B.C. or the first A.D. It is consequently one of the oldest statues of a Buddha that have been found yet. The inscription has also a bearing on Topography, as it tells us that the statue was set up in Gravasti, a well-known place in ancient Indian history. Consequently, the modern village of Set-Mahet, where this statue was found, has been identified with this ancient site. The question, however, which I am discussing in this paper, is as to whether this identification can be upheld or not.

"*Exchange between this Museum and similar Institutions:*

"Nothing to speak of has been done in this direction. The Museum possesses a good deal of duplicates, especially among the large Behar collection, which it would be worth while exchanging with other Museums in India. These Museums partly have got large collections of a different kind, of which we have only few specimens or nothing at all; but, I am afraid, the high railway freights which are to be paid in this case, will always be obstructive to a lively exchange being kept up between this Section and other Museums.

"In this connection, I beg to point to one particular point which deserves more attention than it has received of late. Since the abolition of the Archæological Survey Department this Museum has not had any share whatever in the results of excavations which have been carried out in different

parts of India. This refers to a period of about ten years. The most important discoveries made during this time are: the excavation of the Kankali mound, near Muttra (Mathurá), in N.-W. Provinces. This excavation yielded a large collection of ancient Zaina sculptures, all of which went to Lucknow. Whatever is found in the country corresponding to the ancient Gandhara and Udyana, the modern District of Peshawar, goes to Lahore, and it was merely owing to the liberality of the Bengal Government, acting on Dr. Waddell's representations, that Mr. Caddy was deputed to excavate one of the numerous ancient sites there. If Nepal, as it is now expected, yields ancient sculptures, they probably will come to some other Museum in India, and not to Calcutta. Now, as the Indian Museum is an Imperial Institution, in fact as it is the only Imperial Museum in India, it appears to me that the Archæological Section might fairly claim a certain share in the most important discoveries which are made in the department of Archæology in India.

"*Improvements in the Archæological Gallery:*

"Under this heading I have to mention :—

(A) the arrangement of the Asoka-Casts in the new Asoka-Court. This work was completed under my supervision from September to December 1897;

(B) the re-arrangement of the Gandhara Gallery. This work has been taken up in March 1898, and is still going on. The Mathurá sculptures, originally exhibited in this Gallery, have been removed to one

of the recesses in the southern wing of the Museum building, and the stupa, mentioned on page 3 of this Report, has been erected in the centre of the Gandhara Gallery. Also the sculptured niche with Buddha-statue has been put together in such a way as it may be supposed to have been in the original stupa.

"In conection with this, I beg to mention the services of Munshi Kassimuddin, which proved very useful to me in the arrangement of the Galleries. He also painted the labels of the Asoka-casts, a procedure which I intend to extend over all the exhibits of the Archæological Gallery, in order to help the visitor to acquire an idea of the meaning of the sculptures which he sees.

"*The numismatic collection* during the year under report has been increased by 42 pieces, most of which were given to us by Government under the Treasure Trove Act.

They are:—

2 symbolical coins of Burma: rare and valuable;

1 Indo-Greek coin of Menander;

12 Hindu coins, so-called "gaddhie ká paisé";

3 Andhra coins;

8 gold coins of Kalinga;

3 Assam coins (1 gold, 2 silver);

13 various Muhammadan coins."

REPORT OF THE SUPERINTENDENT,

ENTOMOLOGICAL ASSISTANT.

Mr. E. Barlow has been in charge of Entomology during the whole year, and submits the following very satisfactory report of the work done by him :—

" 1. *Acquisitions.*

648 specimens have been acquired during the year.

" 2. *Naming of Collections.*

(i) Herr E. Brenske determined and returned a miscellaneous collection of Melolonthine beetles.

(ii) Mons. Regimbart identified and returned two collections of beetles of the families Dytiscidæ and Gyrinidæ.

(iii) Mr. Martin Jacoby named and returned a small set of Chrysomelid beetles.

(iv) Lord Walsingham determined and furnished the description of two new species of Tineid moths, *Ereunetis seminivora* Wlsm. and *Cryptophlebia carpophaga* Wlsm., for publication in *Indian Museum Notes.*

(v) Mr. G. B. Buckton furnished a note on a new species of root feeding Aphis *Rhizobius jujubæ.*

(vi) The same gentleman determined and furnished the description of a new species of Aphis *Chaitophorus maculatus* Buck., which infests *Medecago sativus* in Jodhpore.

(vii) The following gentlemen have also given their valuable help in identifying insect-pests:—Sir G. F. Hampson, Bart.; Messrs. W. M. Maskell, Martin Jacoby, J. Desbrochers des Loges, J. Forel and L. Fairmair.

"3. *Entomological Gallery.*

All the cases containing the Exhibit collection of insects have been removed to the new Entomological Gallery, and have there been altered so as to show the specimens in a better manner and in less floor space.

"4. *Publications, etc.*

(i) *Indian Museum Notes,* Vol. IV, No. 2, has been issued.

(ii) MS. of *Indian Museum Notes,* Vol. IV, No. 3, was submitted and is now going through the press.

(iii) Prepared a MS. catalogue of Melolonthine beetles from the Museum collection, for publication in *Indian Museum Notes.*

"5. *Insect-Pests.*

(i) 116 Reports of pests (with specimens) have been received and attended to. The following insect-pests may be mentioned as of particular interest:—

(*a*) *Astycus lateralis* Fabr., a Curculionid beetle said to be attacking tea plants in Assam. Specimens were forwarded through the Reporter on Economic Products to the Government of India.

(*b*) *Euproctis latifascia* Walk., a Lymantriid moth reared in the Museum from caterpillars forwarded by Messrs. Andrew Yule & Co., as destructive to tea plants in Darjeeling.

(*c*) *Belippa lohor* Moore, a Limacodid moth reared in the Museum from an immature specimen sent by Mr. J. W. Fleet as infesting tea bushes in the Doom Dooma tea gardens in Assam.

(*d*) *Thosea divergens* Moore, a Limacodid moth reared in the Museum from caterpillars received from Mr. J. W. Fleet as attacking tea plants in Darrang, Assam.

(ii) 19 Reputed pests have been reared in the Museum.

" 6. Among the numerous insect-pests that have been sent to the Museum for report, may be mentioned our old and inveterate enemy the migratory locust (*Acridium peregrinum* Olivr.), as being the most prevalent and destructive during the year. In Baluchistan alone the loss to revenue owing to damage done to cultivation by this insect is estimated at R60,000 or R70,000. On the 12th June they were reported to be in such swarms that the train from Quetta to Chaman was delayed 2½ hours on their account; while in Toba almost all the barley crops were destroyed, and the owners in despair of saving their crops let their cattle—goats and sheep—loose into their fields, as they preferred to see their crops eaten by them rather than by locusts."

4. The Librarian, Mr. C. O. Bateman, has worked

carefully and conscientiously, and has kept the Library in first rate order.

5. The Taxidermists under Mr. C. Swaries have kept their department in a high state of efficiency.

6. Mr. J. B. Richardson, my personal assistant, has done a great deal of varied work, much of which is useful.

7. The draughtsmen have worked with their usual skill and diligence, as our publications—especially the Illustrations of the Zoology of the Investigator—will testify.

VII.—CONCLUSION.

The usual appendices showing (1) Summary of registered acquisitions, (2) List of Donors to the Museum, (3) List of Donors to the Library, (4) Yearly return of visitors, follow.

From the last it will be seen that 490,197 persons visited the Museum during the 238 days when it was open to the general public, a daily average of 2,059.

Besides these, numerous women and children visited the Museum on Thursday afternoons and numerous students on Fridays.

The collections are all in good order, and all of them are now easily accessible.

The Buildings are all believed to be in good order.

A. ALCOCK, SURGEON-MAJOR,
Superintendent.

APPENDIX A.

Summary of registered additions for the year 1897-98.

ZOOLOGY—								
CŒLENTERA—								
PORIFERA—								
Donations	68							
Exchanges	11			79				
ANTHOZOA—								
Donations	1,101							
Exchanges	24			1,125	1,204			
NEMATHELMINTHES—								
ACANTHOCEPHALA—								
Mus. Collr.	1				1			
ANNELIDA—								
CHÆTOPODA—								
Donations	163							
Exchanges	2				165			
ARTHROPODA—								
CRUSTACEA—								
Donations	1,079							
Exchanges	164			1,243				
PŒCILOPODA—								
Donations	1			1				
ARACHNIDA—								
Donations	1,611			1,611				
MYRIAPODA—								
Donations	4			4				
HEXAPODA—								
Donations	432							
Mus. Collr.	151							
Reared in Mus.	28			611	3,470			
ECHINODERMA—								
ASTEROIDEA—								
Donations	22							
Exchanges	9			31				
OPHIUROIDEA—								
Donations	93							
Exchanges	8			101				
CRINOIDEA—								
Donations	1			1				
ECHINOIDEA—								
Donations	62							
Exchanges	8			70				
HOLOTHURIOIDEA—								
Donations	6							
Exchanges	7			13	216			
MOLLUSCA—								
Donations	242							
Exchanges	14				256			
CHORDATA—								
TUNICATA—								
Exchanges	1			1				
ICHTHYOPSIDA—								
Pisces—								
Donations	1							
Exchanges	45							
Purchases	3		49					
Amphibia—								
Donations	7		7	56				
SAUROPSIDA—								
Reptilia—								
Donations	50							
Exchanges	3							
Purchases	1		54					
Aves—								
Donations	178							
Purchases	28		206	260				
VERTEBRATA—								
MAMMALIA—								
Donations	75							
Purchases	15			90	407	5,719		Zoology.
ARCHÆOLOGY—								
SCULPTURES, ETC.—								
Donations	739				739			
COINS—								
Donations	37							
Purchases	5				42	781		Archæology.

Thompson, Mr. E.
Thurston, Mr. E.
Townsend, Mr. F. W.
Trevandrum Museum (by exchange).
Turin Museum (by exchange).
Watt, Dr. G., C.I.E.
Webb-Ware, Capt. F. C.
Yate, Lt.-Col. C. E.
Yule & Co., Messrs. Andrew
Zoological Gardens, Alipore.

APPENDIX C.

List of Donors to the Library of the Indian Museum during 1897-98.

Adelaide, Royal Society of South Australia	2
Alcock, Dr. A. W.	34
Amherst (Mass.), Hatch Experiment Station	1
Aurivillius, Mons. Chr.	5
Bangalore, Mysore Government Museum	1
Berlin, Museum für Naturkunde Konigliche Friedrichs-Wilhelms Universitat	1
Bombay, Natural History Society	3
Boston, Society of Natural History	8
Brisbane, Department of Agriculture	8
,, Queensland Museum	5
Bruner, Prof. L.	1
Buenos Aires, Museo Nacional de	4
Calcutta, Asiatic Society of Bengal	25
,, Sanskrit College	2
Cambridge (Eng.), University	1
,, (Mass.), Museum of Comparative Zoology at Harvard College	13
Cameron, Mr. P.	1
Cape Town, South African Museum	1
,, South African Philosophical Society	1
Chicago, Academy of Sciences	2
,, Field Columbian Museum	6
Cincinnati, Museum Association	1
,, Natural History Society	1
Colombo Museum	1
,, Royal Asiatic Society	1
Copenhagen, Naturhistorisk Forennig	2
Costa Rica, Museo Nacional de	1
Dehra Dun, Forest School	15
Dresden Koniglichen Sammlungen	1
Carried over	148

Brought forward	148
Dublin, Royal Irish Academy	3
Edinburgh, Museum of Science and Art	1
Finn, Mr. F.	1
Geelong, Gordon College Museum	1
Genoa, Musei di Zoologia e Anatomia Comparata della R. Universita	2
Godwin-Austen, Major H. H.	1
Government of Bengal, Secretariat	1
,, ,, Bombay	5
,, ,, India, Comptroller of India Treasuries	1
,, ,, ,, Geological Survey	11
,, ,, ,, Home Department	20
,, ,, ,, Inspector General of Forests	1
,, ,, ,, Marine Survey	2
,, ,, ,, Meteorological Department	18
,, ,, ,, Printing Press	21
,, ,, ,, Revenue and Agricultural Department	13
,, ,, ,, Sanitary Commissioner	1
,, ,, ,, Survey Department	2
,, ,, North-West Provinces and Oudh	2
,, ,, Punjab	1
,, ,, Queensland	1
Grahamstown, Albany Museum	1
Haarlem, Koloniaal Museum	15
Hansen, Dr. H. J.	1
Hyman, Mr. C. P.	2
Indianapolis, Academy of Science	2
Ithaca, Cornell University	2
Jamaica Institute	2
Java Experiment Station	16
Karsh, Dr. F.	7
Kerremans, Capt. Ch.	1
Kolbe, Prof H. J.	4
Krœpelin, Prof K.	1
Leipzig, Koniglich-Sachs. Gesellschaft Wissenschaften	9
Lesne, Mons. P.	1
Carried over	321

Brought forward .	321
London, British Museum	8
„ Royal Society	21
„ Zoological Society	8
Loriol, Mons. P. de	1
Lucas, Dr. R.	2
Lucknow, Provincial Museum	1
Madras, Government Museum	2
„ „ Press	2
Man, Dr. J. G. de	1
Manchester, Owen's College Museum	6
Marseille, Faculté des Sciences	12
Meissner, Dr. M.	1
Milwaukee, Public Museum	1
Montevideo, Museo Nacional de	1
Museo de la Plata	3
Nebraska University	4
New Brunswick Agricultural Experiment Station . . .	1
New York, American Numismatic and Archæological Society	2
„ „ American Museum of Natural History . .	2
Nova Scotia, Institute of Science	1
Ontario, Entomological Society	16
Ormerod, Miss E. A.	2
Ortmann, Dr. A. E.	2
Paris, Museum d'Histoire Naturelle	12
Philadelphia, Academy of Natural Science	2
„ Museum of Science and Art	2
Portland, Society of Natural History	1
Quajat, Dr. E.	12
Santiago, Societe Scientifique du Chili	6
Sclater, Mr. W. L.	1
Singapore, Raffles Museum	1
Smith, Prof. J. B.	1
St. Louis, Academy of Science	13
Stockholm, Academy of Royal Science	2
Carried over .	474

Brought forward .	474
Sydney, Australian Museum	7
„ Department of Agriculture	15
„ Linnean Society of New South Wales . . .	3
Taiping, Perak Museum	1
Tiflis, Kauk Museum	1
Torino, Musei de Zoologia et Anatomia Comparata della R. Universita	42
Tornier, Prof. G.	1
Vienna, K. K. Natur Hofmuseum	2
Washington, Bureau of Ethnology	3
„ Smithsonian Institution	5
„ United States Department of Agriculture . .	25
„ „ „ National Museum . . .	5
Waterhouse, Col. J.	1
Weltner, Dr. W.	1
Zehntner, Dr. L.	1
Donations .	587
Purchases .	522
TOTAL .	1109

APPENDIX D.

YEARLY RETURN OF VISITORS.

Number of Visitors from 1st April 1897 to 31st March 1898.

Month.	Natives.		Europeans.		Total.
	Male.	Female.	Male.	Female.	
April 1897 .	26,840	7,422	411	151	34,824
May* ,, .	16,432	4,023	372	166	20,993
June ,, .	32,523	9,425	469	206	42,623
July ,, .	29,036	7,615	384	164	37,199
August ,, .	34,315	9,597	596	263	44,771
September ,, .	31,096	10,072	608	219	41,995
October ,, .	42,990	12,882	747	377	56 996
November* ,, .	16,858	5.087	322	182	22,449
December ,, .	33,494	9,006	923	450	43,873
January 1898 .	38,371	15,447	1,248	660	55,726
February ,, .	33,512	11,579	744	327	46,162
March ,, .	31,630	10,222	525	209	42,586
GRAND TOTAL .	367,097	112,377	7,349	3,374	490,197

The number of visitors to the Museum during the 238 days on which the Institution was open to the general public was 490,197, or a daily average of 2,059 persons.

* Closed on account of annual repairs from 1st to 15th May and 1st to 15th November.

ANNUAL REPORT

OF

THE ECONOMIC AND ART SECTION

OF THE

INDIAN MUSEUM

FOR THE YEAR

1897-98.

No. $\frac{70}{X}$.

From

D. HOOPER, Esq.,

Officer in charge, Economic and Art Section,
Indian Museum, Calcutta,

To

THE HONORARY SECRETARY TO THE
TRUSTEES OF THE INDIAN MUSEUM.

Dated Calcutta, the 27th May 1897.

SIR,

I HAVE the honour to submit the Annual Report of the Economic and Art Section of the Indian Museum for the year ending March 31st 1898.

Dr. George Watt, C.I.E., whose efficient administration is well known to the Trustees, was Officer in Charge of the Section for the whole of the year.

According to the plan adopted in former Annual Reports, the remarks on the progress of the Section may be arranged in the following order:—I.—Economic Gallery, II.—Artware Gallery, III.—Ethnology Gallery.

REPORT OF THE OFFICER IN CHARGE.

I.—ECONOMIC GALLERY.

Additions. The number of specimens received and registered during the year was 1,472, commencing with number 9003 and ending with number 10474 in the General Register kept in the Receiving and Despatching Department. All these collections are acknowledged in the appendices to this Report, but a few of them are deserving of special notice.

Tea pests. Nearly two hundred articles were contributed by Dr. Watt as the result of a tour made in Assam and Bengal in March 1897 in his capacity of Reporter on Economic Products. A large number of these specimens consist of samples of the various tea diseases illustrative of the report on "The Pests and Blights of the Tea plant," recently written by Dr. Watt and published by the Revenue and Agricultural Department.

Mustard. The Department of Land Records and Agriculture, Bengal, contributed one hundred and forty-three varieties of *Brassica* seeds in illustration of the report on Indian Mustards drawn up by Dr. D. Prain and published as an Agricultural Bulletin. All the specimens are of peculiar interest; they are too small to admit of duplication, and are therefore retained in the Museum.

Cotton. Eighty-five samples of cotton have been received as the result of experiments connected with the growth in India of the Egyptian "Abassi" cotton. The Bengal Land Records and Agricultural Department have also presented fifty samples of the indigenous cottons of Bengal. Botanical specimens of the plants accompanied the above, which make them of great value for purposes of study.

Tobacco. The Curator of the Imperial Institute has forwarded for deposit in the Museum a series of specimens illustrating the experimental manufacture of cigarettes from Tirhoot tobacco. This series

is all the more interesting, as the tobacco has been analysed and reported upon by the Scientific Department, and duplicates are preserved in the Imperial Institute.

Paper material.

A large supply of the leaves of *Nipa fruticans*, received from the Deputy Conservator of Forests, Sunderbans, has been tested as a paper-making material. The Manager of the Bally Paper Mills kindly undertook to conduct the experiments, and he found the midribs of the leaves to be suitable for making low-class white papers; fibre (45·5 per cent.) good and clean, but rather difficult to bleach. The prepared half-stuff resulting from the experiments is shown in the gallery. The quantity obtained was too small to admit of the actual manufacture of paper.

Silk.

Two very fine specimens of Tasar silk have been presented during the year. One of raw silk, produced by *Antheræa pernyi*, was received from Sir Thomas Wardle, Kt., of Leek, through the Government of India, Revenue and Agricultural Department; the other came from the silk expert, Mr. N. G. Mukharji, Assistant Director, Land Records and Agriculture, Bengal.

Drugs.

Thirty-six specimens of authentic Indian drugs were contributed by the Curator. These were a few rare essential and fixed oils and oleo-resins which might serve as type specimens for future comparison. The rest were barks and roots representative of South Indian medicines, portions of which had been chemically analysed.

Japanese timbers.

Sir George King's contribution of Japanese timbers needs to be recorded. This farewell gift to the Museum is a set of fifty specimens of typical woods of Japan, each of which is prepared with great care and neatness, and is accompanied by a label giving the vernacular and scientific name of the tree yielding it.

Index collections. The collections as they are received from the Despatching Department are compared with the General Register, and the date of deposit in the gallery filled in the column provided for that purpose. The chief work in this court has been the arrangement of the specimens, first into their respective bays, and secondly into their respective index boxes. The index collection, it might be explained, is made up of the smaller representative samples exhibited in glass-faced tin boxes (8″ × 4″ × 2″) arranged in five rows on the walls of each bay. The total number of index specimens now on exhibition is 2,500.

Considerable progress has been made during the year in bringing together the different classes of products. The bays devoted to "Medicines" and "Dyes and Tans" are already nearly complete. The whole of the blocks of timber known as Mr. Gamble's collection, together with the Museum specimens, have been sawn according to the required dimensions for their new positions in the stands, and are placed alphabetically in the two bays allotted to timber.

Oils. A large collection of oils has been dealt with, and as many samples as possible have been displayed in the new white glass-stoppered bottles received from England. It is now possible to show side by side a special oilseed, the oil obtained from it, and the cake left after expression. Several specimens of fixed oil of a thick consistence at ordinary temperatures have been filtered through paper in a hot-water oven in the laboratory. By this means the unsightly deposits in the oils have been separated and their appearance greatly improved.

Minerals. A start has been made in placing specimens in the shelves and cases of the "Mineral" section. The chief assortment at present comprises numerous samples of coal, corundum, salt and various minerals from Jaipur.

A and B cases. The A and B cases described in detail in the last Annual Report are gradually being filled up with typical commercial specimens, and so displayed as to give a graphic illustration of the several articles enumerated in the *Dictionary of Economic Products*. Coloured illustrations of economic plants from Messrs. Duthie and Fuller's *Field and Garden Crops* have been mounted and prepared for exhibition in the "A" cases. These lithographs, which were kindly supplied for the purpose by Mr. Duthie, F.L.S., will form an attractive feature in the court when the cases are dry enough to receive them. It has been found that white paper and labels become discoloured by the action of the fresh paint, but this inconvenience has now practically disappeared through the doors having been opened daily for three or four months in the dry weather. Messrs. Johnston and Hoffman have kindly presented a photograph of a palm, *Corypha martiana*, *Becc.*, and Dr. Watt has presented a photograph of a Rusa oil factory for exhibition in the gallery.

Duplicate specimens. As many as 754 duplicate specimens were forwarded in the usual way to the Imperial Institute, London. The Director of Kew Gardens, on behalf of the Economic Museum under his control, asked through Her Majesty's Secretary of State to be allowed to participate in the division of Indian products collected by the Reporter, and he has accordingly been supplied with thirty of the more interesting samples. The Frankfort Museum has also been furnished with another consignment of products selected from the surplus stocks.

Marking scientific names. The work of marking the scientific names on the "A and B" cases was completed last September according to contract. It was found, however, that during the monsoon the damp affected the paint, so that it was liable to be rubbed off in cleaning the glass. This matter was immediately attended to, and each word received a coating of white hard varnish, which, so far, has overcome the defect.

Soap exhibit.

The North-West Soap Company, Garden Reach, has deposited in the Economic Court a very ornamental show case containing specimens of all the varieties of soap and candles made by the firm. The case is situated between the bays devoted to "Oils and Oilseeds," and forms a very attractive exhibit.

Visitors.

Although the Economic Gallery is not at present open to the general public, visitors interested in any special product are allowed to examine the specimens. Two members of a firm interested in cotton and jute machinery inspected the collection of timbers with a view to secure a suitable wood for manufacturing bobbins. A wood was selected for experiment, and the firm was placed in communication with the Conservator of Forests, in whose district the trees are found. Mr. A. Jores, a silk expert from Crefeld, Germany, was shown our collection of Indian silkworms, cocoons, and raw and manufactured silk from various provinces.

On the 18th December the following members of the Bengal Chamber of Commerce by special arrangement paid a visit to the Economic Gallery :—Hon'ble Mr. Allan Arthur (President), Hon'ble Mr. M. C. Turner (Vice-President). Members—S. Finney, A. K. Muir, A. P. Rodocanachi, and W. Parsons (Secretary). Sir Patrick Playfair was also present by invitation. The members were shown the different bays of oils, tans, fibres, food-grains, medicines, and timbers, and their attention was drawn to a few of the wall cases, such as those exhibiting rhea, cutch, and aconite. The members expressed themselves interested in all that was shown, and the Secretary has since written to say that the Chamber will be glad to assist in contributing specimens.

The construction of the central glass cases of this Court has not yet been commenced by the Public Works Department. A large quantity of material consisting of dyed fabrics and manufactured fibres of various descriptions are awaiting accommodation in these cases.

In Appendix D a plan is given of the Economic Gallery with the central cases in position.

6

ECONOMIC AND ART SECTION.

II.—ARTWARE GALLERY.

Additions. The following additions were made to the gallery during 1897-98:—

(*a*) An Eri-silk shawl, embroidered, collected in Assam by the Reporter on Economic Products.

(*b*) Five sets of shell bracelets, collected in Dinajpur by the Reporter on Economic Products.

(*c*) One sample of Maldive mat received from the Collector of Malabar.

(*d*) Half a dozen samples of glass flasks and funnels, presented by the Panjab Science Institute, Lahore.

(*e*) A set of glass bangles, presented by the Lahore Museum.

(*f*) Twenty-five pieces of pottery, received from the Deputy Commissioner of Multan.

(*g*) Eight pieces of pottery, Ajanta pattern, received from Sir J. J. School of Art, Bombay.

(*h*) Four specimens of camel-hide *kupis*, gold lacquered, made in Rajputana and one made in the Panjab.

(*i*) One sample of lacquered copper flower vase made in Rajputana.

(*j*) One woollen saddle bag made in Peshawar.

(*k*) Three specimens of camel-bone *surnadani*, made in the Panjab.

(*l*) Two silk sample pieces from the Collector of Bankura.

(*m*) One Berhampore silk sample piece, rough texture, presented by Mr. N. G. Mukharji, Assistant Director Land Records and Agriculture, Bengal.

(*n*) Three samples of machine-made European imitation of tye and dye cloth, presented by Messrs. Ewing and Company.

Rearrangement.

The interesting and valuable collection of pottery contributed by His Honour the Lieutenant-Governor of Burma, arranged in the room adjoining the Artware Gallery, has been transferred to the case in which specimens of Indian pottery are displayed. Two or three fancy flower-potstands being too large for the case have been accommodated outside on wooden brackets at the extreme eastern end of the gallery. The collection of Bengal pottery has also been removed from the western end of the pottery case to the eastern end of the gallery, where they have been rearranged in four upright wall cases contiguous to the Burmese specimens. The room adjoining the main gallery, rendered vacant by the removal of the Burmese pottery, has been assigned to stone and glass-ware exhibits. In the case standing in the middle of this room have been arranged the mythological stone figures manufactured in Jaipur. The collection of the models of snakes has been brought together and displayed in two triangular corner cases standing in this room. The inlaid wood-work from Mysore, Hoshiarpur, Monghyr, and other places has been rearranged to greater advantage in one of the central show cases in the gallery.

The whole of the metal manufactures have been thoroughly cleaned with acid and whiting, and replaced in their cases according to an improved geographical classification.

The specimens of horn and ivory manufactures, lacware, hats, damascened work, and *bidri*-work have also been cleaned and rearranged in their respective cases.

Damage by the Earthquake.

It might be noticed that during the earthquake of the 12th June 1897, this section of the Museum suffered considerable loss by breakage of a large number of valuable pottery exhibits. The Trustees have sanctioned an adequate sum of money to replace the losses occasioned by the damage in the Multan and Bombay specimens.

State of collections.

The Gallery walls, windows and cases were all carefully attended to and the contents overhauled during the annual cleanings. The cotton, silk, woollen, and mixed fabrics, horn and ivory

manufactures, lacquered ware, mats and matting, and metal manufactures, in part, have been pretty thoroughly shaken and brushed, and replaced in their cases. Small muslin bags filled with naphthalin have been liberally distributed in all the cases in the gallery, and where insects have appeared, the affected articles have been saturated with poisoned spirit. The exhibits generally may be said to be in a satisfactory state of preservation.

Cataloging and labelling.

About three hundred exhibits consisting of pottery, ivory and horn manufactures and wood carvings have been checked with the old registers, and about the same number of old and damaged labels replaced by new ones. All the stone and glassware exhibits and the brassware articles of Bombay, Madras, Central Provinces, Jaipur, North-Western-Provinces, Bengal, Assam, and the Panjab have been entered in classified registers. The work of checking rearrangement and labelling is being carried on with a view to compile a catalogue of the gallery.

Bison hornwork.

Mr. E. H. Aitken of Ratnagiri sent a very interesting description of the manufacture of bison hornwork in his district. This article was published as an *Agricultural Ledger*, with an introduction on Indian hornwork written by the Curator and with illustrations of some of the examples referred to by Mr. Aitken.

Repairs.

Several pieces of pottery and stone manufactures broken during the earthquake and other specimens that have been accumulating for a long time in this court have been repaired with cement.

The cases have specially been examined, and a few defective locks having been discovered they were also repaired during the year.

Transfers.

A large number of metal manufactures consisting of sacred utensils, domestic articles, musical instruments and toys were removed from this court as being more adapted for exhibition in the Ethnology Court. These transfers have been duly noted in the Gallery registers.

Loan of exhibits.

The Secretary of the Muhammadan Literary Society applied to this section for specimens of interest to be lent for exhibition at the Society's conversazione at the Town Hall on the 3rd March. A selection was made of pieces of wood-carving, leather *kupies*, Muhammadan pictures, and other articles which were considered suitable, and these were arranged for despatch. At the last moment, however, the Secretary expressed his unwillingness to be responsible for any breakages during transit, and requested our servants to take charge of the specimens during the night of the conversazione. Under these circumstances it was not considered advisable to lend the specimens, and they were accordingly not sent.

Visits of students.

Permission has been given on two occasions to the students of the Architectural drawing class of the School of Art to visit this court and draw from measurement the models of the Benares and Kantanagar temples. The students availed themselves of the privilege on the days appointed, and behaved themselve in an orderly manner. It is understood that the Trustees have no objection to this section being occasionally used for purposes of education and reference, and indeed have accorded their sanction to students working in the Museum.

Baroda Museum collections.

At the instance of the Director of the Baroda State Museum, Dr. Watt was asked to purchase for that Institution several typical artware specimens peculiar to Bengal. The specimens of Cuttack filigree work, Monghyr inlaid work, Berhampore *bidri*ware, Patna glassware and Ethnological clay figures have been received and despatched to Baroda. The specimens of Dacca muslin and Murshidabad ivory work are shortly expected in this office, and will be sent to Baroda in due course. The articles as they were received were examined and compared with those in the Museum, and then forwarded to their destination. The entire cost of the collection and freight is borne by the Director of the State Museum.

In Appendix E a plan is given of the Artware Gallery.

III.—ETHNOLOGY COURT.

During the period under report one hundred and sixteen specimens, as noted below, have been received in this Court:—

Additions.

Description of specimen.	No. received.	From whom received.
Pots and pans	2	Collected by the Reporter, Economic Products, during a tour in North Bengal and Assam.
Weapons and implements ...	2	
Looms, spindles, &c.	1	
False jewellery	4	
Basketware	2	
Building material	1	
Earthenware	4	
Musical instrument	1	
Smoking pipes	3	
Cotton fabrics	9	
Models of boats	1	Collector of Malabar.
Wearing apparel	2	
Sacred articles	4	Mr. Severin of Sonari, Assam.
Solapith (Æschynomene aspera)—		
Manufactures	8	Sambalpore.
Ditto ditto ...	1	Sangor.
Ditto ditto ...	1	Chanda.
Ditto ditto ...	2	Jabbalpur.
Ditto ditto ...	7	Karimganj.
Ditto ditto ...	1	North-Western Provinces and Oudh.
Ditto ditto ...	16	Goalpara.
Ditto ditto ...	3	Muzaffarpur.
Ditto ditto ...	2	Subdivisional Officer, Mangaldai.
Ditto ditto ...	13	Director of Land Records, and Agriculture, North-Western Provinces and Oudh.
Wooden manufactures ...	1	Prome.
Ditto	2	Panjab.

Description of specimens.	No. received.	From whom received.
Fishing boat ...	1	Bombay.
„ net ...	1	Assam.
Grain measures ...	3	Bankura.
A complete collection of postage and telegraph stamps of British India and the Native States ...	...	Government of India.
Buchanania latifolia		
Wood manufactures	8	Forest Officer, Bhandara.
Livistona Jenkinsiana		
Manufactures ...	7	Conservator of Forests, Nowgong.
Licuala peltata		
Manufactures ...	3	Ditto, ditto.

They have all been duly registered, labelled and exhibited in the Gallery. All the specimens, excepting the three grain measures, were obtained through the Reporter on Economic Products.

Rearrangement.

The models of houses and huts hitherto lying about have been collected together and displayed on the two square show cases at north-west end of the Gallery. A fine collection of unused postage stamps, postal envelopes and telegraph stamps of British India as well as of the Native States was presented by the Government of India through the Reporter on Economic Products. These have been displayed in a glass case fitted up in the narrow room leading into the Gallery. It is proposed to devote this room to the exhibition of portraits of the Native Rulers of India. The few pictures of Rajas already suspended have been much appreciated by the visitors to the Museum.

The flags of Burmese origin obtained from a temple in Assam have been erected near the centre of the Gallery,

at the east end of the large case containing the ethnological figures. This conspicuous position is more suited for such a large exhibit than the small bay to which it was at first assigned. A glass case is being fitted up at the west end of the Gallery for articles made of sola pith. A large collection of this material in different stages of manufacture has been received from various provinces.

All the prints from Dalton's "Ethnology of Bengal" and several mounted photographs of typical Indian races have been distributed about the court. Characteristic pictures of the various tribes have also been placed in the large glass case of clay models during the year under report to more fully illustrate national costumes. Other pictures showing boats, musical instruments, bows and arrows, and religious scenes are exhibited in the cases assigned to these objects. The rest are suspended from the walls by the sides of the cases all round the court.

All the toys (Division IX), educational articles (Division X), and sacred objects (Division XI) were taken out, examined, cleaned and replaced in their respective cases. The figures of the Hindu deities were made a subject of special study during the year, and were entirely rearranged according to the best authorities on Hindu mythology. Some of the idols were wrongly named when presented to the Museum, and a few of the sacrificial utensils were meagrely described in the registers. It has therefore necessitated a vast amount of reference to be able to classify them all. Dr. Bloch of the Archæological Branch of the Indian Museum, kindly assisted in the work with his advice.

Cataloguing and labelling.

During the year eight hundred and sixty-two old damaged labels have been replaced by new ones. The section devoted to domestic utensils has been re-examined. The pots and pans; the plates, platters, cups, water and oil vessels; weights and measures; boats and canoes; the fishing nets, traps, spears, rods, lines and hooks; the agricultural implements, models of mills, machines, looms and spindles, &c.; the toys, educational articles, idols

and Buddhist figures have been entered in classified registers. Of the eleven divisions of the Ethnology Court, rough registers have been prepared for nine and the remaining two divisions, ethnological figures and arms, will be classified shortly. The rough lists of collections will require to be considerably elaborated before they can be utilised for the preparation of a catalogue.

State of Collection.

The exhibits in the Gallery have been generally dusted and cleaned, and were particularly attended to during the half-yearly cleaning, and poisoned where required. The state of the collections may be said to be very satisfactory.

In Appendix F a plan is given of the Ethnology Court.

Disposal of useless specimens and furniture.

With the permission of the Trustees twenty-six life-sized clay models of natives of India made for the Calcutta Exhibition of 1883 were sold to a contractor for the nominal sum of Rs. 13. The figures had very much deteriorated since they were made, and there was no suitable accommodation for them in the Gallery.

Several show cases removed from the sheds in front of the Museum were sold by public auction by Messrs. Mackenzie, Lyall & Co. after the Superintendent had made a selection from them.

The plaster casts used for moulding the ethnological figures having fallen into a most dilapidated condition were thrown into the Museum tank.

Turnstiles.

The turnstiles placed in the gang-ways between the main building and the Sudder Street block of the Museum, after being inspected by the Trustees, were ordered to be removed, as they were considered to be a source of danger to the public should a panic arise. They were accordingly removed by the Public Works Department in January last.

Staff.

Mr. D. Hooper, Quinologist to the Government of Madras, was appointed Assistant Curator of the Section on the 23rd May 1897. Mr. W. R. Yates had held the post *sub. pro tem.* for about

11 months previous to the above date. The designation of the appointment was changed to that of Curator in October last. Mr. A. Merces, Clerk of the Economic Gallery, and Babu Phani Bhusan Dutt, who has been in charge of the Art and Ethnology Galleries, have worked with zeal during the year. Babu Kogan N. Bannerji has given satisfaction in discharging the clerical duties that devolved upon him.

IV.—LABORATORY.

The Trustees having recognised the need of a chemical laboratory in connection with the Economic Section, sanctioned the cost of freight of the chemicals and apparatus of the Quinologist's Department from Ootacamund to Calcutta. Two large rooms on the west of the ground-floor were fitted up with benches and shelves, water was laid on, and, with a northerly aspect, the rooms are conveniently situated for chemical investigations.

One hundred samples of various kinds were examined between October 1st 1897 and March 31st 1898. They are classified as follows:—

Tannin extracts	72
„ materials	12
Medicinal products	10
Gums	2
Soils	2
Soap	1
Indigo	1
Total ...	100

The results of the examinations, for the sake of convenience, are referred to in the following paragraphs.

Tannin extracts from Coorg.

The Conservator of Forests, Coorg, in response to an appeal made by the Inspector-General for concentrated tannin preparations similar to cutch, sent a number of liquid extracts derived from astringent barks and fruits found in the Province. The extracts had to be tested without

delay, as most of them were in a state of fermentation. The tannin value of 27 specimens was determined, and it was proved that the bark of *Pterocarpus marsupium* afforded the richest extract, while the barks of species of *Terminalia* and *Lagerstrœmia* gave very high percentages. The report also drew attention to certain materials that would be quite unsuitable for leather manufacture.

Tannin extracts from Tista Division.

Another series of 18 liquid extracts was made from the barks of trees obtained in the Tista Valley, Darjeeling. The report on their analyses showed that the barks of *Terminalia myriocarpa*, *T. tomentosa*, *Engelhardtia spicata* and *Quercus lamellosa* were sufficiently astringent to justify further experiments. An interesting feature in this investigation was that the bark of *Acacia Catechu* yielded a valuable extract. The wood is the part of the tree recognised as the source of the commercial article known as cutch or kath, and is the part used by cutch-makers, the bark being rejected.

Cutch.

Three samples of cutch—one from Assam and two from Burma—were favourably reported upon. The amount of crystalline catechin in this extract is frequently inconstant and due to reasons which it is difficult to explain; on the other hand, the quantity of tannic acid in trade samples varies within certain fixed limits, and this feature makes cutch appreciated in commercial circles.

Than-sha.

Burmese cutch is occasionally adulterated with gums, resins, and other substances having no leather-curing properties. One of the adulterants, said to be at one time added systematically, is the extract of the bark of *Than* (*Terminalia Oliveri*). *Than-sha* or extract of this bark is not altogether devoid of tannin; it affords a brownish-black, brittle solid containing a large quantity of deep-red colouring matter which is calculated to mask the addition of other inert ingredients. Authentic samples of the leaves and bark of the *Than* tree and of fresh

and old samples of *Than-sha* have been submitted to detailed proximate analysis.

Acacia arabica.

In old works of Indian Materia Medica a substance obtained from *babul* pods is described as of great repute among the Arabians and Persians for various diseases. The extract, or *Akakia* as it is called, is still used by Muhammadans in Northern India. Samples of the drug have been called for in connection with an enquiry into the products of *Acacia arabica*, and on their coming to hand they were considered worthy of examination. It was remarkable to find that three of the specimens sold in the bazars as *akakia* were seriously adulterated with asphalt, and were evidently prepared from materials having no connection whatever with the *babul* tree. To render the investigation complete, a full analysis was made of selected *babul* pods and of the extract made from them for the purpose of placing on record the standard composition of this drug for future guidance.

Mangrove barks.

The following mangrove barks, with the corresponding extracts made from them, were supplied for analysis by the Deputy Conservator of Forests, Sunderbans:—

Ceriops Candolleana.	Bruguiera gymnorhiza.
Ceriops Roxburghiana.	Rhizophora mucronata.
Kandelia Rheedei.	

The barks contained from 5 to 26·2 per cent. of tannin and the dried extracts from 33·5 to 71·1 per cent. The first-named bark in the above list was found to be the most suitable for making mangrove cutch.

Dæmia extensa.

A specimen of dried juice of this plant was included in a collection of specimens sent by the Director of Land Records and Agriculture, Bengal. The leaves are used as an emetic and expectorant, and the active principle is said in the *Pharmacographia Indica* to be an alkaloid named Dæmine. The dried juice, although containing a large excess of mineral matter, gave distinct re-actions for an alkaloid having the properties of Dæmine.

Vitex trifolia.

The Reporter's office having been asked for the oil of *Vitex trifolia*, an attempt was made to obtain it through the Agricultural Department. Replies were received to the effect that all efforts to separate the oil had failed. An analysis of the fruits showed that they yielded to ether less than 5 per cent. of a fragrant balsamic oil—a quantity which was not practicable to extract in the usual way by expression. Our correspondent was accordingly informed of the fact.

The analyses of the samples of soil, gum, and soap call for no special remark.

V.—LIBRARY.

The number of books, pamphlets, and serial publications received during the year came to 399. These have been duly registered and placed in the Library (see Appendix C).

VI.—ECONOMIC HERBARIUM.

A large number of botanical specimens collected by the Reporter during his tours in Manipur, Kulu, Assam, and Bengal have been identified by Sir George King and Dr. Prain, and arranged according to their natural orders by the Curator. Owing to the collection receiving constant additions, it is becoming increasingly useful for purposes of reference. Several hundreds of specimens of the cotton plant are now arranged in order. Samples of aconite, opium, poppy, morinda, *Lagerstrœmia*, *Bœhmeria nivea*, *Villebrunea*, and *Coix* have been incorporated in the Herbarium during the past year.

I have the honour to be,

Sir,

Your most obedient servant,

DAVID HOOPER,

Officer in charge,

Economic and Art Section, Indian Museum.

ECONOMIC AND ART SECTION.

APPENDIX A.

Summary of registered Additions for the year 1897-98.

		No.	
Artware—			
Shell manufactures ...	Purchased	5	
Embroidery, Eri silk ...	Ditto	1	
Mat	Ditto	1	
Glassware	Donation	7	
Camel-hide *kupis* ...	Purchased	5	
Camel-bone *surmadani* ...	Ditto	3	
Woollen saddle-bag ...	Ditto	1	
Copperware	Ditto	1	
Silk	Ditto	2	
Do.	Donation	1	
Pottery	Purchased	33	
European imitation of chintz tye and dye cloth.	Donation	3	
		63	
Economic products—			
From Imperial Institute collection—			
Cotton		89	
Indigo and its substitutes		5	
Sugar		1	
Tans and Tanning materials		268	
Corundum		62	
Opium		16	
Tea, tea substitute and tea pests ...		41	
Medicines, including indigenous drugs ...		38	
Food-grains		157	
Dyeing industries		23	
Æschynomene (sola)		32	
Fibres including Reha		63	
Dye-stuffs		152	
Oils (fixed and edible) and oilseeds ...		215	
Timbers, &c.		64	
Mangrove barks		51	
Gums and Resins		38	
Theophila huttoni and Tasar silk ...		11	
Rubber		8	
Lacwork including Bobbins		97	
Paper materials		16	
			1,447
Carried over ...			1,447

APPENDIX A—*continued.*

		No.	
Brought forward	...	...	1,447
Acacia catechu and substitutes ...	...	42	
Crotalarea Juncea ...	... ...	2	
Sunflower Oil ...	... ...	1	
Agar agar ...	... ...	2	
Carum	... ...	13	
Piperbetle ...	... ...	3	
Oroxylon indicum ...	... ...	1	
Nicotiana Tabacum ...	... ...	15	
Dioscorea sp. ...	... ...	4	
Hibiscus Perfurmery	... ...	2	
Umbrella handles ...	... ...	6	
Index collections ...	... ...	464	
Miscellaneous—			
Agricultural pests ...	... ...	15	
Grape disease ...	... ...	4	
Bamboo disease ...	... ...	1	
Seed ornament ...	... ...	2	
Cotton seed soap ...	... ...	2	
			579
			2,026

		No.	
Ethnology—			
Pots and pans ...	(Duplicates of the Imperial Institute collections.)	2	
Weapons and implements.	(Ditto) ...	2	
Looms, spindles, &c. ...	(Ditto) ...	1	
False jewellery ...	(Ditto) ...	4	
Basket ware ...	(Ditto) ...	2	
Building material ...	(Ditto) ...	1	
Earthenware ...	(Ditto) ...	4	
Musical instrument ...	(Ditto) ...	1	
Smoking pipes ...	(Ditto) ...	3	
Cotton fabrics ...	(Ditto) ...	9	
Models of boats ...	(Ditto) ...	1	
			30
	Carried over	...	2,056

APPENDIX A—*concluded.*

			No.	
	Brought forward	...	...	2,056
Wearing apparel ...	(Duplicates of the Imperial Instituet collections.)		2	
Sacred articles ...	(Ditto)	...	4	
Solapith (*Æschynomene sapera* manufactures.)	(Ditto)	...	54	
Wooden manufacture ...	(Ditto)	...	11	
Fishing boat ...	(Ditto)	...	1	
Fishing net ...	(Ditto)	...	1	
Levistona Jenkinsiana manufactures.	(Ditto)	...	7	
Licuala peltata manufactures.	(Ditto)	...	3	
Grain measures ...	(Purchased)	...	3	
A complete collection of Postage and Telegraph stamps of India and the Native States.	(Donation)	...		86
				2,142

APPENDIX B.

List of Donors to the Ecomonic and Art Section during the year 1897-98.

NAME OF DONOR.	Nature of article contributed.
1	2
Revenue and Agricultural Department of the Government of India.	A complete collection of Postage and Telegraph stamps of India and the Native States.
The Panjab Science Institute ...	Glass-ware.
The Lahore Museum ...	Ditto.

APPENDIX B—*continued.*

NAME OF DONOR.	Nature of article contributed.
1	2
Mr. N. G. Mukharji, Assistant Director, Land Records and Agriculture of Bengal.	Silk.
Sir Thomas Wardle, Kt., of Leek	Raw Chinese Silk.
,, George King, K.C.I.E., F.R.S. ...	Japanese wood specimens.
Dr. George Watt, C.I.E. (on tour)	Index and Fibres.
D. Hooper, Esq., Curator ...	Index, Oils, Medicine and Intoxicants.
J. R. Royle, Esq., C.I.E., Curator, Imperial Institute.	Prepared samples from Indian Tobacco; prepared fibre.
A. F. Bruce, Esq.	Indigo substitute.
Director of Land Records and Agriculture, Assam.	Dyeing materials and Fibre plants.
Director of Land Records, and Agriculture, Bengal.	Index, Cotton (indigenous and experimental), Betel plants, Oilseeds and Oils and Indigenous Drugs.
Director of Land Records and Agriculture, Berar.	Gums, materials illustrating Dyes, Yams, Index.
Director of Land Records and Agriculture, Burma.	Food-grains, Fibres and Fibre plants, Oilseeds, Sola and Tans.
Director of Land Records and Agriculture, North-Western Provinces.	Index, Dye stuff and Medicine.
Director of Land Records and Agriculture, Panjab.	Food-grains, Index, Dye stuff, and Silkworm.
Survey Commissioner and Director, Land Records and Agriculture, Bombay.	Index, Cotton (experimental), Famine food.
Board of Revenue, Madras ...	Food-grains, Fibre, Index, Indignous, Drug, Oilseeds.
Commissioner of Settlements, Central Provinces.	Cotton (experimental) Dyes, materials illustrating Dyes, Sola and Oilseeds.
Board of Revenue, Lower Provinces, Bengal.	Opium and opium alkaloids.

APPENDIX B—*continued.*

Name of Donor.	Nature of article contributed.
1	2
Government of Victoria through Revenue and Agricultural Department to Government of India.	Wheat.
Revenue and Agricultural Department, Government of India.	Cotton seed soap.
Inspector-General of Forests to Government of India.	Silkworm, Medicinal gum, Cutch and Tannin Extracts.
Revenue Secretary to Government of Burma.	Tea seeds and oyster shells.
Financial Secretary to Government of Burma.	Food-stuff.
Director of Geological Survey to Government India.	Corundum, Rubies and Magnetite.
Conservator of Forests, Burma, Pegu Circle.	Tans, Tannin extracts, Cutch, Rubber and Insecticides.
Conservator of Forests, Burma, Mandalay Circle.	Cutch and Cutch substitutes.
Conservator of Forests, Burma, Tenasserim Circle.	Index, Medicine, Tannin extracts, Sola and Sugar.
Conservator of Forests, Upper Burma, Eastern Circle.	Gums, Index, Planks.
Conservator of Forests, Upper Burma, Western Circle	Kachin Tea.
Conservator of Forests, Central Provinces, Northern Circle.	Tans, Gums.
Conservator of Forests, Central Provinces, Southern Circle.	Tans, Spices.
Conservator of Forests, Hyderabad	Lac, Oilseeds and Gum.
Conservator of Forests, Kashmir	Index.
Acting Conservator of Forests, Madras, Southern Circle.	Medicinal gum, Rubber.
Conservator of Forests, Madras, Central Circle.	Gums, Index, Oil and Oilseeds.

APPENDIX B—*continued.*

NAME OF DONOR.	Nature of article contributed.
1	2
Conservator of Forests, North-Western Provinces, School Circle	Tannin extracts, Cutch.
Director of Imperial Forest, School, Dehra Dun, North-Western Provinces.	Tannin extracts.
Officer in charge, Bundelkhand Forest Division, Jhansi.	Index, Gums.
Deputy Conservator of Forests, Andamans.	Index, Gum, Planks.
Deputy Conservator of Forests, Bhamo, Burma.	Rubber.
Deputy Conservator of Forests, Beluchistan.	Index.
Deputy Conservator of Forests, Chindwin, Burma.	Grass.
Deputy Conservator of Forests, Chamba, Panjab.	Index.
Deputy Conservator of Forests, Coorg, Mysore.	Tannin extracts.
Deputy Conservator of Forests, Darrang, Assam.	Rubber and Rubber plants.
Deputy Conservator of Forests, Depôt Agency, Burma.	Planks and logs.
Deputy Conservator of Forests, Ganges Division, North-Western-Provinces.	Index, Planks.
Deputy Conservator of Forests, Garo Hills, Assam.	Tans.
Deputy Conservator of Forests, Goalpara, Assam.	Index.
Deputy Conservator of Forests, Gorakhpur, North-Western Provinces.	Index.
Deputy Conservator of Forests, Gonda, Oudh.	Index, Oilseeds, Oils.

APPENDIX B—*continued.*

NAME OF DONOR.	Nature of article contributed.
1	2
Deputy Conservator of Forests, Hazara, Panjab.	Medicine, Gums.
Deputy Conservator of Forests, Kamrup, Assam.	Tans.
Deputy Conservator of Forests, Kangra, Panjab.	Index.
Deputy Conservator of Forests, Katha, Burma.	Rubber.
Deputy Conservator of Forests, Kulu, Panjab.	Spices.
Deputy Conservator of Forests, Kumaon, North-Western Provinces.	Index.
Deputy Conservator of Forests, Kurseong, Bengal.	Index.
Deputy Conservator of Forests, Lakhimpur, Assam.	Dyes and Index.
Deputy Conservator of Forests, Moulmein, Burma.	Planks.
Deputy Conservator of Forests, Naini Tal, North-Western Provinces.	Oil, Dye stuff and Index.
Deputy Conservator of Forests, School Circle, North-Western Provinces.	Tannin extracts, Gum, Index, Oil and Oilseed.
Deputy Conservator of Forests, Shahpur, Panjab.	Index.
Deputy Conservator of Forests, Simla.	Gum, Plank.
Deputy Conservator of Forests, Singhbhum, Bengal.	Tannin extracts.
Deputy Conservator of Forests, Sundarbans, Bengal.	Mangrove extracts, Food-grains and paper materials.
Deputy Conservator of Forests, Tista, Bengal.	Tannin extracts.

APPENDIX B—*continued.*

Name of Donor.	Nature of article contributed.
1	2
Deputy Conservator of Forests, Wardha, Central Provinces.	Dyes.
Assistant-Conservator of Forests, Jhansi North-Western Provinces.	Dyes.
Assistant Conservator of Forests, Pilibhit, North-Western Provinces.	Fibres.
Assistant Conservator of Forests, Lakhmipur, Assam.	Index.
Assistant Conservator of Forests, Sibsagar, Assam.	Index, Tans.
Extra Assistant Conservator of Forests, Angul, Bengal.	Dyes.
Extra Assistant Conservator of Forests, Puri, Orissa.	Entada seeds (Index).
District Forest Officer, Godaveri, Madras.	Oilseeds and Index.
District Forest Officer, Kristna, Madras.	Index.
District Forest Officer, Kolar, Mysore.	Tans.
District Forest Officer, Malabar, Madras.	Dye and Log.
District Forest Officer, Nilgiris, Madras.	Index.
District Forest Officer, Nellore, Madras.	Gums, Fibre and Tanbarks.
District Forest Officer, North Coimbatore, Madras.	Index.
District Forest Officer, Tunkur, Mysore.	Tans.
Forest Divisional Officer, Bahraich, North-Western Provinces.	Index, Gums, Oil and Oilseeds.
Forest Divisional Officer, Betul, Central Provinces.	Gums, Oil and Index.

APPENDIX B—*continued.*

NAME OF DONOR.	Nature of article contributed.
1	2
Forest Divisional Officer, Bhandara, Central Provinces.	Gums, Tans, Dyed articles.
Forest Divisional Officer, Chittagong, Bengal.	Index.
Forest Divisional Officer, Kheri, North-Western Provinces.	Index.
Forest Divisional Officer, Gorakhpur, North-Western Provinces.	Index.
Forest Divisional Officer, Hoshangabad, Central Provinces.	Index.
Forest Divisional Officer, North Division, Kanara, Bombay.	Tan barks, Log.
Forest Divisional Officer, South Division, Kanara, Bombay.	Ditto, Do., Plank.
Forest Divisional Officer, North Thana, Bombay.	Nets.
Forest Divisional Officer, West Khandesh.	Tan barks and dyed materials.
Subdivisional Forest Officer, Poona, Bombay.	Oil-seeds.
Forest Officer, Koderma, Bengal...	Gum, Oil and Oil-seeds.
Forest Ranger, Bushahr, Punjab ...	Dye-stuff.
Ditto, Rattanchand ...	Spices and a set of botanical collections.
His Highness the Maharaja of Jeypur (through Political Resident).	Garnet sand.
His Highness the Maharaja Holkar of Indore (through Political Resident).	Wheat.
Political Resident, Jeypur ...	Minerals.
Agent to Governor-General, Central India Agency.	Index, dye-stuff, wheat.

APPENDIX B—*contributed.*

NAME OF DONOR.	Nature of article contributed.
1	2
Political Agent, Kashmir ...	Food-stuff.
Ditto, Kotah, Rajputana	Lac and lacware.
Ditto, Haraoti and Tonk	Lac and tan barks.
Ditto, Western States, Rajputana.	Lac and lacware.
Ditto, Bhopawar ...	Index, yams, wheat disease.
Ditto, Manipur ...	Dye-stuff, food.
Political Officer, North Lushai ...	Rice pests.
N. G. Mukerji, Esq., Assistant Director, Land Records and Agriculture, Bengal.	Cotton and silk cloth.
Deputy Commissioner, Darrang, Assam.	Dye plants.
Ditto, Nowgong, do.	Dye, dye plant, index, fibre.
Ditto, Sylhet, do.	Index, spice, food-stuff.
Ditto, Garo Hills, do.	Food-grains, index.
Ditto, Goalpara, do.	Index, dyeing materials.
Ditto, Kamrup, do.	Fibre, seeds, index, dyeing materials.
Ditto, Jorhat, do.	Dye.
Ditto, Khasi and Jaintia Hills, Assam.	Index, food-grain.
Ditto, Lakimpur, Assam ...	Index, dye plants, spices.
Ditto, Naga Hills, Assam...	Dyes and dye plants; food-grains.
Ditto, Simla, Pánjab ...	Dye.
Ditto, Kangra, Panjab ...	Index.
Ditto, Narsingpur, Central Provinces.	Dye.
Assistant Commissioner, Golaghat, Assam.	Dyeing material.
Ditto, Jorhat, Assam ...	Food-grains.

APPENDIX B—*continued.*

Name of Donor.	Nature of article contributed.
1	3
Extra Assistant Commissioner, Jorhat, Assam.	Food-grains, sola, paper substitute.
Collector of Backergunge, Bengal	Food-grains.
Ditto, Midnapore do. ...	Dye.
Ditto, Godavari, Madras ...	Food-grains.
Ditto, Chingleput (through Board of Revenue, Madras.)	Ditto.
Ditto, Kurnool ...	Ditto.
Ditto, Kistna ...	Ditto.
Ditto, Ganjam ...	Ditto.
Ditto, North Arcot ...	Ditto.
Ditto, South Canara ...	Ditto.
Ditto, Tanjore ...	Ditto.
Ditto, Tinnevelly ...	Ditto.
Deputy Opium Agent, Malwa ...	Opium.
Subdivisional Officer North Cachar	Dyeing materials.
Ditto, Jowai	Fibre and dye-plants.
Muktyarkar of Karachi, Sind ...	Index.
Superintendent of Jails, Bankura, Bengal.	Fibres.
Superintendent, Indian Museum ...	Rubber.
Ditto, Central Museum, Madras.	Index and dye.
Ditto, Experimental Farm, Cawnpore, North-Western Provinces.	Index, medicine.
Ditto, Experimental Farm, Nagpur, Central Provinces.	Cotton (experimental cultivation).

APPENDIX B—*continued.*

NAME OF DONOR.	Nature of article contributed.
1	2
Superintendent, Experimental Farm, Saharanpur, North-Western Provinces.	Index, food-grain, perfume, fibre, seed.
Ditto, Royal Botanic Gardens, Sibpur, Bengal.	Fibre, seeds and experimental cotton.
Ditto, Municipal Gardens, Karachi, Sind.	Vine disease.
Ditto, Empress Gardens, Poona.	Ditto.
Medical Store-keeper to Government, Bombay Command.	Indigenous drugs.
Medical Store-keeper to Government, Madras Command.	Ditto.
District Superintendent of Police, Dinajpur, Bengal.	Rice pest.
Messrs. Kilburn & Co. ...	Indigo substitute.
„ Balmer, Lawrie & Co. ...	Tea pests.
„ Davenport & Co. ...	Do.
„ Finlay, Muir & Co. ...	Do.
„ Williamson, Magor & Co.	Do.
Central Duars Tea Company ...	Do.
Ganges Manufacturing Company	Bobbins.
Bowreah Cotton Mills ...	Do.
British South Africa Company ...	Food-grains.
Ullmann Hirschhorn & Co. ...	Umbrella and umbrella handles.
Dr. Grant, Egmore, Madras ...	Sea-weeds.
Dr. Armstrong, Nepal Residency	Gum and fibres.
Revd. Mr. Campbell, of Pakuria, Bengal.	Index.
Mr. T. F. Severin of Tiok, Assam	Rhea fibre.
„ Lessert, Bankura, Bengal ...	Fibre.
„ T. Phillips, Assam ...	Rhea fibre articles.

APPENDIX B—*concluded.*

Name of Donor.	Nature of article contributed.
1	2
Mr. Whigham, Assam ...	Tea pest, rhea fibre articles, bamboo rope.
„ Peter	Coffee disease.
„ Melrose Arnot, Bally, Calcutta	Paper pulp and paper.
„ Lumsden, Assam ...	Rhea fibre.
Dr. David, of Zagzig, Cairo, Egypt	Cotton: its plants and seeds.
Mr. Fleet, Salonah, Assam ...	Tea pests.
„ Davidson, of Alipur Duars ...	Madder dye.
„ Chamney, Assam ...	Cutch.
G. Bellairs, Esq. of Berrang Tea Company, North-Western Provinces.	Tibet brick tea.
J. A. Thomson, Esq., of Ligri Pukri, Assam.	Tea pests.
R. P. Thomson, Esq.	Do.
—Roger, Esq. of Brahmaputra Tea Company.	Do.
Mr. Cowasjee Hathydaroo, of Seoni, Central Provinces.	Sorghum pests.
Babu Ashutosh Biswas, Head Clerk to the Municipal Board, Benares.	Lac and lac-ware.

APPENDIX C.

List of Donors of Books to the Economic and Art Section during the year 1897-98.

Name of Donor.	Name of book.
1	2
The Secretary of State for India	Royal Gardens, Kew; Bulletin of Miscellaneous information.
The Chief Commissioner, Assam	Agricultural Bulletin No. 3 of Assam; Forest Administration Report, Assam, 1895-96; Note on crop experiments carried out in Assam, 1896-97; Report of the Department of Land Records and Agriculture, Assam, 1896-97.
The Survey Commissioner and Director of Land Records and Agriculture, Bombay.	Quarterly Returns of the Rail-borne Trade of the Bombay Presidency; Annual Report of the Government Experimental Farm, Poona; Annual Report of the Department of Land Records and Agriculture, Bombay.
The Under-Secretary to the Government of Bombay, Revenue Department.	Forest Administration Report of the Bombay Presidency for 1895-96.
The Assistant Secretary to the Government of India, Home Department.	Selections from the Records of the Government of India, Home Department; Report on the administration of the Andaman and Nicobar Islands and the penal settlement of Port Blair and the Nicobars.
The Meteorological Reporter to the Government of India.	Meteorological Reports and Monthly Weather review.
The Under-Secretary to the Government of India, Foreign Department.	Report on the Political Administration of the Rajputana States.

APPENDIX C—*continued.*

Name of Donor.	Name of book.
1	2
The Under-Secretary to the Government of India, Finance and Commerce Department.	Annual Statement of the Trade and Navigation of British India with foreign countries, 1897.
The Inspector-General, Civil Veterinary Department.	Annual Administration Report of the Civil Veterinary Department in India for 1896-97.
The Superintendent, Government Press, North-Western Provinces and Oudh.	Agricultural Bulletin No. 6, (Provincial), 2 copies.
The Superintendent, Government Press, Madras.	Annual Administration Report of the Forest Department, Madras Presidency, for 1895-96.
The Revenue Secretary to the Government of the Punjab and its Dependencies.	Annual Report of the Government Agri-Horticultural Garden, Lahore.
The Secretary for Berar to the Resident, Hyderabad.	Report on the Forest Administration of the Hyderabad Assigned Districts for 1895-96.
The Collector of Customs, Karachi.	Quarterly Returns of the Rail and River-borne Traffic of the Province of Sind.
The Honorary Secretary, Jeypur Museum.	The Jeypur Museum Catalogue.
The Superintendent, Government Printing, India.	Judicial and Administrative Statistics of British India for 1895-96; Accounts of the Trade carried by Rail and River in India in 1895-96; Agricultural Statistics of British India for 1891-92; List of Officers in the Survey and other minor Scientific Departments.
The Secretary, Board of Revenue, Revenue Settlement, and Director of Land Records and Agriculture, Madras.	Report on the operations of the Department of Land Records and Agriculture, Madras Presidency, for 1895-96.

APPENDIX C—*continued.*

NAME OF DONOR.	Name of book.
1	2
The Under-Secretary to the Government of Bengal, Revenue Department.	Monographs on the Cotton Fabric Industry of Bombay, Madras, Burma, and the Hyderabad Assigned Districts; Fauna of British India—Moths, Vol. IV; Hymenoptera, Vol. I.
The Superintendent, Indian Museum.	Perak Government Gazette; Report on the Arboricultural operations, North-Western Provinces and Oudh.
Dr D. Prain	Four short letters on the subject of an open Museum in the Scottish Capital; Lectures on the Dairy and Dairy farming; Bee and Bee-keeping; Poultry; Catalogue of Mr. Oscar Dickson's Collections (Great International Fisheries Exhibition); Memorandum of Proceedings at a Drawing-room meeting for the promotion of Technical Education; Letters from Vice-Admiral Smyth on a "Double-faced" brass in Stone Church, &c.; On two large English Cannon of the Fifteenth Century preserved at Mont St. Michael in Normandy; New Zealand Institute—Anniversary Address of the President (1883); Report of the Auckland Institute for 1878-79; Catalogue of the Fountaine Collection; On the manner in which Larvæ of a

APPENDIX C—*concluded.*

Name of donor.	Name of book.
1	2
Dr. D. Prain	Nematus on *Salix cinerea* are checked; Notes on the observation of Injurious insects; Phylloxera—Tome II, No. 1, and Tome XIX; On Locust plagues in Cyprus and in North America; The Pine Moth of Nantucket; On the Plague of Caterpillars at Clitheroe; The Manchester Art Museum; Annales de Chimie et de Physique; Notes on Economic Entomology; An Account of the History and Manufacture of Ancient and Modern Terra Cotta; The Arts and Manufactures of India; On the Art of Pottery; Notes on the manufacture of Porcelain at Chelsea; British Guiana Exhibition, 1879; The American Exhibition, London, 1886; England and her Colonies at the Paris Exhibition; Catalogues of pictures, sculptures, &c., in the University of Glasgow; Catalogue of pictures, drawings, &c., lent to the Australian International Exhibition of 1879 and 1880; On a silver-gilt Patera; The Iron trade of Cleveland; Firs Report of Committee of Enquiry on white-ants, St. Helena, 1864.

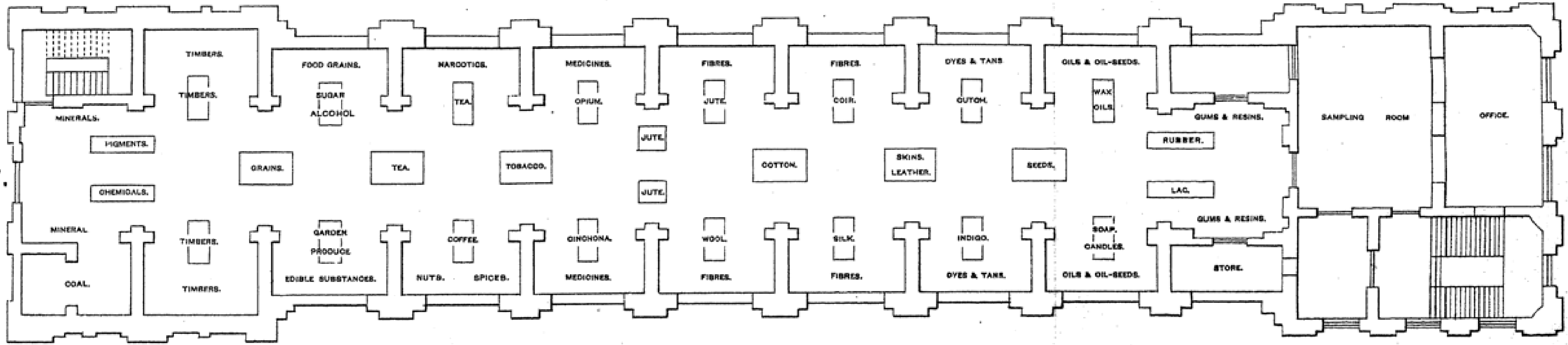
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N.

ECONOMIC GALLERY.

Scale 20 Inches = 1 Foot.

W.



E.

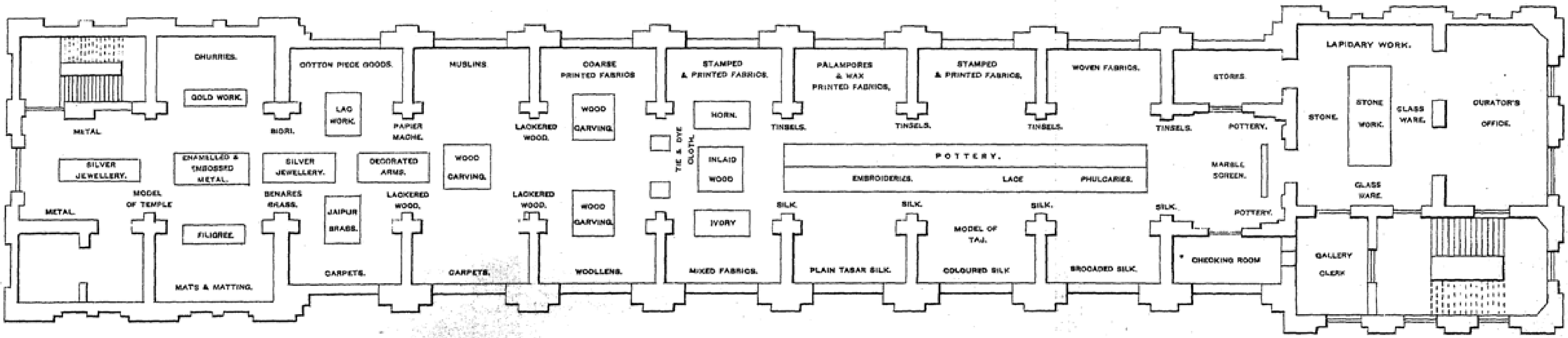
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ARTWARE GALLERY.

Scale 20 Inches = 1 Foot.

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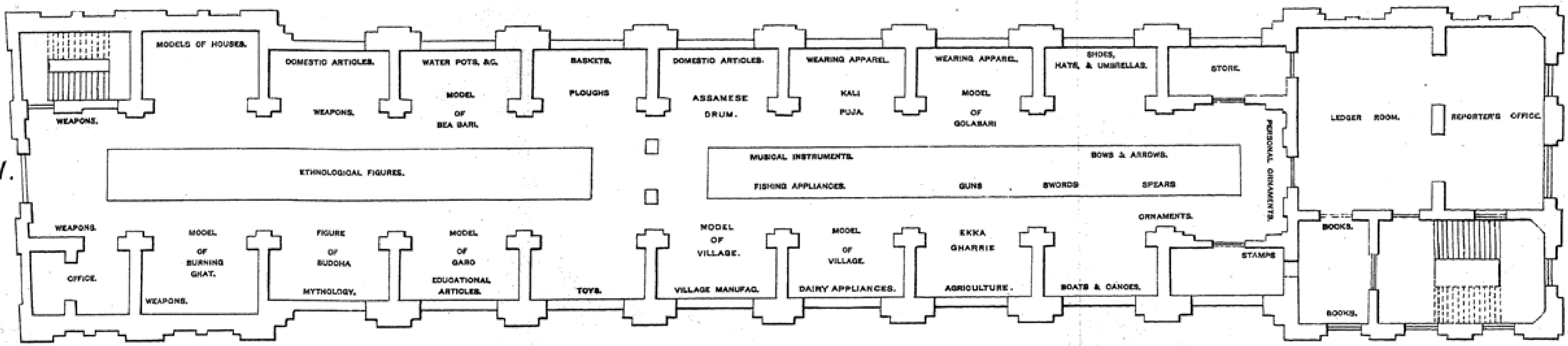
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[APPENDIX F.]

ETHNOLOGY GALLERY.

Scale 20 Inches = 1 Foot.

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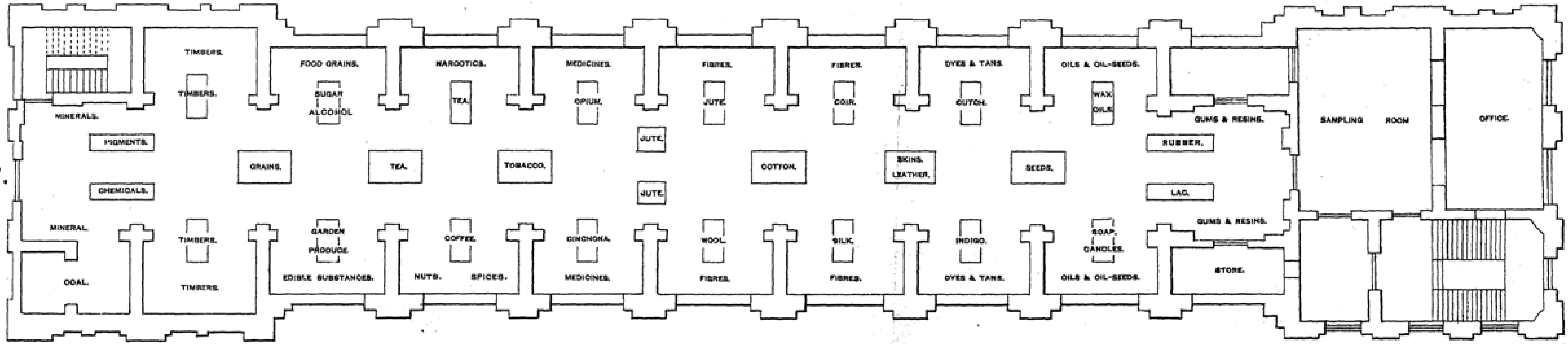
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N.

ECONOMIC GALLERY.

Scale 20 Inches = 1 Foot.

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